



# MEXICO STATEWIDE WILDERNESS STUDY

## VOLUME 3: APPENDICES WILDERNESS ANALYSIS REPORTS



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## APPENDIX 21

ADEN LAVA FLOW WSA  
(NM-030-053)

## I. GENERAL DESCRIPTION

## A. Location

The Aden Lava Flow Wilderness Study Area (WSA) is located in the southwest quarter of Dona Ana County, 21 miles southwest of Las Cruces, New Mexico, and 45 miles northwest of El Paso, Texas. The WSA lies east and northeast of the West Potrillo Mountains and Mount Riley WSAs.

The U.S. Geological Survey (USGS) topographic maps covering the WSA are the Noria, Afton, Mount Riley, and Aden, New Mexico quadrangles. All of these maps are at the 15-minute scale.

## B. Climate and Topography

The Aden Lava Flow WSA is characterized by an arid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is approximately 8 inches. A wide variation in annual precipitation is characteristic of arid climates as illustrated by annual extremes of 19.60 and 3.62 inches recorded at New Mexico State University in Las Cruces during a 74-year period of record. More than half of the moisture normally falls during July, August, and September from convective thundershowers that are commonly intense and of short duration.

During the summer months, daytime temperatures quite often exceed 100°F. The average monthly maximum temperature during July, the warmest month, is slightly above 90°F. In January, the coldest month, the average monthly minimum temperature is in the middle 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west and may exceed 30 mph in the afternoons.

The majority of the WSA (about 77 percent) is covered by the Aden Lava Flow. The lava flow is a nearly flat landform with average elevations ranging from 4,225 feet to 4,300 feet. The interior relief of the flow, however, is extremely varied. Steep-walled depressions in the lava occur in varying shapes and sizes. The larger depressions are 100 feet in diameter and 40-50 feet deep. Crevices up to 5 feet wide and 20-30 feet deep are numerous. Other ministructures within the flow include pressure ridges and lava tubes.

The Aden Crater and Afton volcanoes are the most prominent topographic features in the lava flow. Aden Crater, in the northwest part



## ADEN LAVA FLOW

of the WSA, is nearly circular with an interior depression about one quarter of a mile in diameter. The Afton volcanoes are a cluster of three resurgent volcanoes in the southeast part of the WSA.

The south-central part of the WSA outside of the lava flow is generally flat with rolling sand dunes.

### C. Land Status

The WSA contains 23,857 acres of public land. There are no State or private inholdings; however, 640 acres of State land are cherry-stemmed in the east-central part of the WSA. (See Map 21-1 for land status.)

### D. Access

The Aden Lava Flow WSA is legally accessible from County Roads B02 and A19, which form portions of the northeastern and eastern boundaries. Ranch roads along the northwestern, western, and southern boundaries all cross State and private lands for which there is no legal public access.



Looking West from the Aden Crater.



# ADEN LAVA FLOW WSA (NM-030-053)

Proposed Action--All Wilderness Alternative

- WSA Boundary
- BLM
- State

State ownership is identified only inside the WSA boundary.

Scale: 1/2 inch=1 mile

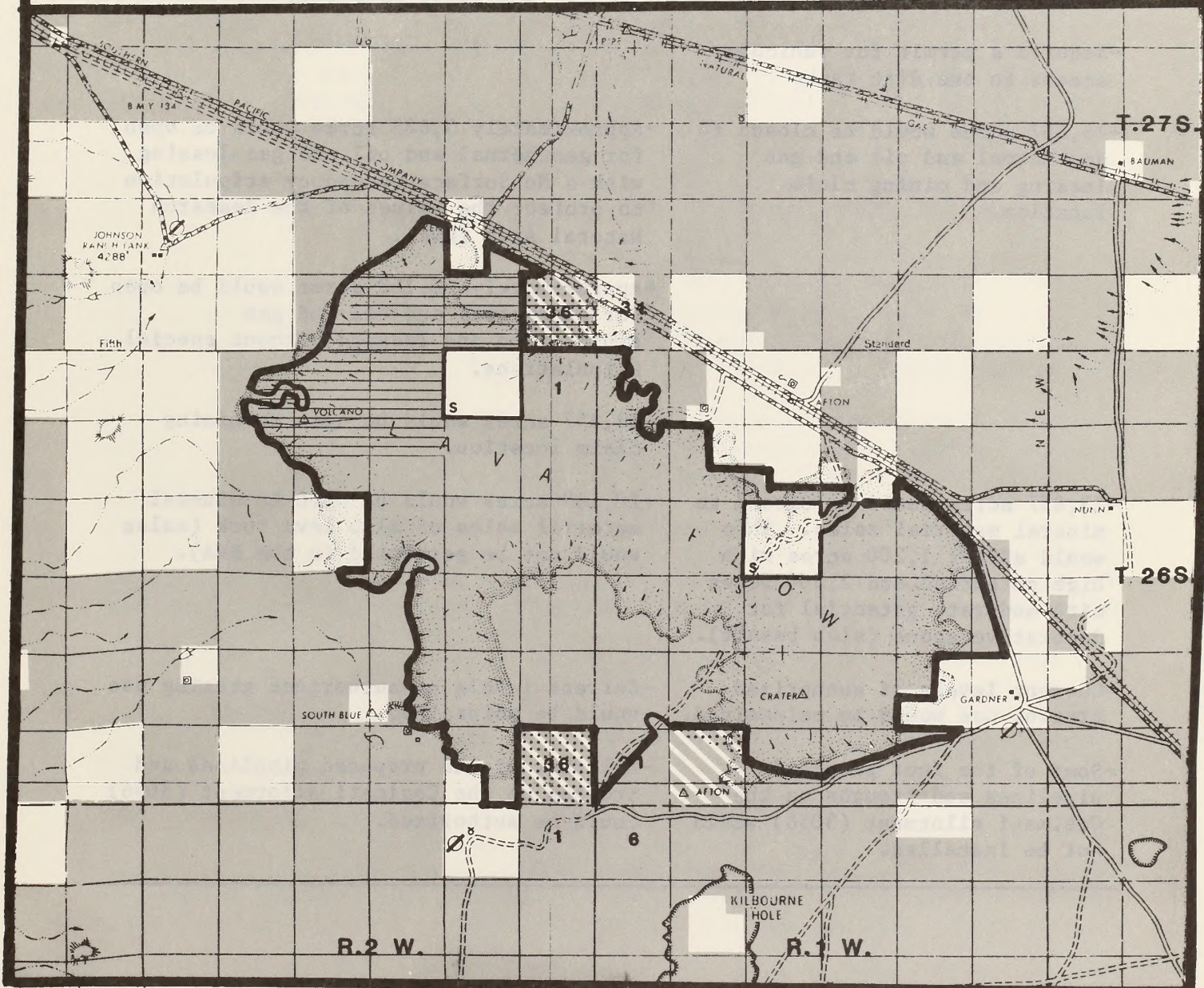
Source: USDI BLM, Las Cruces District, January 1985.

## MAP 21-1 LAND STATUS

■ BLM Surface/Non BLM Subsurface

■ Lands Removed from WSA Status after Reinventry

■ Aden Research Natural Area





E. Proposed Action, Alternatives, and Issues

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness (Proposed Action)	No Action/No Wilderness
°Manage 23,857 acres as wilderness.	°Manage 23,857 acres without wilderness protection.
	-4,008 acres would continue to be managed as a Research Natural Area
-Attempts would be made to acquire 1,990 acres of State land adjacent to the WSA.	-No special attempts would be made to acquire State land.
-Close 6 miles of vehicle trails.	-Vehicle use would be allowed to continue.
-Require a permit for vehicular access to one dirt tank.	
-23,857 acres would be closed to geothermal and oil and gas leasing and mining claim location.	-Approximately 3,688 acres would be open for geothermal and oil and gas leasing with a No Surface Occupancy stipulation to protect the values of the Research Natural Area (RNA).
	-Approximately 20,169 acres would be open for geothermal and oil and gas exploration and leasing without special stipulations.
	-23,857 acres would be open to mining claim location.
-23,857 acres would be closed to mineral material sales. This would affect 1,200 acres with high potential and 2,300 acres with moderate potential for decorative stone (slab basalt).	-20,169 acres would be open to mineral material sales of slab lava rock (sales would not be permitted in the RNA).
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
-Some of the four proposed pipelines and troughs on the Cosimati allotment (3056) would not be installed.	-All four of the proposed pipelines and troughs on the Cosimati allotment (3056) could be authorized.



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues
	Wilderness Values
All Wilderness (23,857 acres) (Proposed Action)	Wilderness protection would maintain the area's existing natural values, outstanding opportunities for solitude, and special ecological and geological features of scientific and educational interest.
No Action/No Wilderness (23,857 acres)	Wilderness values would not receive long-term Congressional protection. The extraction of slab lava rock for decorative stone could degrade wilderness values in the southeast part of the WSA in the long-term.



## II. EXISTING RESOURCES

### A. Geology

The WSA is west of the Rio Grande valley on a basin surface known as the La Mesa geomorphic surface. Features common to this area include coppice sand dunes, low relief volcanic craters and depressions, basalt flows, and cinder cones. Stratigraphic test wells indicate that thin deposits of eolian sand and recent volcanic flows overlies bolson fill and volcanics of Quaternary and Tertiary age, which in turn overlies sediments of Mesozoic and Paleozoic age. Major structural features in or near the WSA include the northeast-trending Robledo and Fitzgerald faults, and the northwest-trending Aden rift.

Thin vesicular olivine basalts of the Aden Lava Flow cover approximately 30 square miles, most of which lies within the WSA. The Aden basalt was extruded over 10,000 years ago, probably from fissures along the Robledo fault and Aden rift, and is associated with shield, spatter, and explosion collapse craters and depressions (Hoffer 1976). The Aden crater, a shield volcano (DeHone 1965), sits astride the Aden rift in the northwest corner of the WSA. Other features present along the Aden rift are circular and linear collapse depressions, probably the result of collapse over lava tubes or vents, and herraduras, U-shaped lava ridges. The surface of most of the lava within the Aden Lava Flow WSA is smooth, with some pahoehoe (ropey) lava and minor occurrences of aa (clinkery) lava (Hoffer 1975).

### B. Water

The Aden Lava Flow WSA is situated within the highlands of the Mesilla Basin. Commonly referred to as La Mesa, this portion of the Mesilla Basin contributes to the larger Rio Grande Basin.

Surface water within the WSA drains predominantly as sheet flow with no distinct channel system. Drainage follows a slight gradient to the southeast and occurs as a result of local summer thundershowers.

Ground water in the Mesilla Valley is available primarily from the Santa Fe formation. A ground water trough is found between the West Potrillo Mountains and Aden Hills, and movement is southeastward towards the Rio Grande Valley. The gradient of the water table flattens from northwest to southeast across La Mesa. Depth to water is greater than 400 feet below the lava flow. Recharge to the ground water reservoir is limited in the WSA due to intrusive sills and other impermeable igneous rocks below the lava. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

The Aden Lava Flow WSA consists primarily of recent volcanic deposits characterized by black basalt rock outcroppings having a sharp, jagged surface with crevices and depressions interspersed among the outcroppings. Most of the soil material is found in the depressions. These



soils were derived from basalt or were wind deposited and typically have surface textures of loam or sandy loam. The rock outcrop sheds water to these soils, thereby increasing the effective precipitation to these soils.

On the east side of the WSA, there is a lesser amount of exposed rock and the soils typically are shallow and sandy over caliche coated basalt bedrock. These soils are usually gravelly on the surface.

#### D. Vegetation

##### 1. General

The vegetation and associated range sites within the Aden Lava Flow WSA consist of four major types:

Vegetation Types	Range Sites	Federal Acres
Grass-mixed desert shrub	Malpais (lava flow)	18,373
Mesquite	Sandy	3,879
Creosote	Shallow sand	1,261
Grass-mixed desert shrub	Bottomland (swale)	344

Grass species (tobosa, vine-mesquite, dropseeds, bluestems, and black grama) occur in pockets of soil in the rough broken lava rock of the malpais (lava flow). Mixed desert shrub species such as creosote, snakeweed, Mormon tea, tarbush, and yucca occur where large amounts of soil have accumulated.

Mesquite, yucca, broom dalea, snakeweed, and pale wolfberry shrub species are the dominant vegetation on sandy areas on the south side of the Aden Lava Flow WSA. Grass species, present in small amounts, are bush muhly, black grama, other gramas, tobosa, dropseeds, and threeawns.

Creosote shallow sand areas occur around the edges of the lava flow in this WSA. Other shrub species associated with these areas are snakeweed, Mormon tea, yucca, mesquite, and cacti. Grass species including bush muhly, black grama, dropseeds, tobosa, and fluffgrass occur in small numbers.

Deep soils in the bottomland (swale) areas support small dense stands of tobosa grass. Invading shrubs are sumac, Mormon tea, mesquite, tarbush, and snakeweed.

##### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).



## ADEN LAVA FLOW

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

### E. Wildlife

The Aden Lava Flow WSA is mainly a lava habitat site (77 percent). Small areas of other habitat sites found at the outer edges are mesquite sand dune, snakeweed, and creosote.

The Aden Lava Flow exhibits a number of valuable and interesting wildlife features. The edge of the flow is an ecotonal area which has an overlap of species from both the lava and the surrounding desert. There also may be species typical of the ecotone itself.

Vent tubes and the many crevices found in the lava provide escape cover and den sites for wildlife. Bats are numerous because of the good habitat; there are 12 species identified from the lava flow. Wide-ranging carnivores can live within the flow and move out into the desert to hunt. There are ten carnivore species found in the lava flow; seven is the average number for desert ranges. Rodents and rabbits are abundant around the edges of the lava flow because there is soft sand for burrowing, vegetation for feeding, and the nearby escape cover of the lava flow.

There are many depressions in the lava flow which collect rainwater. The vegetation in these depressions is denser than that of the lava flow or the surrounding desert. These areas are particularly important for the bird life of the WSA because they provide more food and cover than any other part of the WSA. Outside the lava flow, soaptree yuccas are fairly common. These are important for nesting raptors, particularly Swainson's hawks (BLM 1976). There are high densities of raptors in the surrounding desert, especially in the winter (BLM 1981). It is likely that high rodent prey densities, such as those at the edge of the flow, partially account for this.

A phenomenon peculiar to lava flows is that many animals living on them exhibit melanism, or protective dark coloration. Two melanistic species, the rock pocket mouse and the black-tailed rattlesnake, have been found in the WSA. Both are rock-dwelling animals which are isolated to the lava flow by the surrounding desert (BLM 1976).



#### F. Visual

Two scenic quality rating units (SQRUs) describe the Aden Lava Flow WSA. The Aden Crater and Lava Flow are seen as one rating unit with a Class B or moderate scenic quality rating. The lava flow has a broken irregular surface which is low in profile and horizontal in form. The Crater rises above the lava flow to an elevation of 4,300 feet, and has a flat-topped conelike form. Pockets of soil support scattered vegetation. There is some degree of color contrast between the dark brown and black colored lava rock and the dark greens and light browns of the vegetation.

The south-central part of the WSA is an area of flat to gently rolling desert with a Class C scenic quality rating. The green, tan, and gray colors of creosote, mesquite, yucca, and grasses offer some contrast with the orange-brown sand dunes. This scenery is common within the region.

Approximately 20,681 acres of the WSA (the Aden Crater and Lava Flow) fall into a Visual Resource Management (VRM) Class III. The remaining 3,176 acres in the south-central part of the WSA are in a Class IV.

#### G. Cultural

There are no known cultural sites in the Aden Lava Flow; however, there has been very little survey in the area. There is a major paleontological site in the Aden Fumarole which may still contain significant deposits (see Chapter III, Education/Research).

#### H. Air

Generally, the quality of air within the Aden Lava Flow WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

General locations of areas with moderate or high potential for mineral resources within the Aden Lava Flow WSA are shown on Map 21-2. The locations of areas under lease for oil and gas are shown on Map 21-3.

##### 1. Energy Minerals

As of December 1, 1984, nine oil and gas leases were present within the WSA boundary, all of which became effective after the enactment of the Federal Land Policy and Management Act (FLPMA) in 1976. A Research Natural Area (RNA) has been designated in the northwestern corner of the Aden Lava Flow. Leasable energy minerals within the RNA are leased with a No Surface Occupancy (NSO) stipulation to protect the values of the area (BLM 1983).

##### a. Oil and Gas

Although petroleum source and reservoir rocks probably occur at depth, and shows of hydrocarbon were encountered in a deep oil and gas wildcat well about 4 miles northeast of the WSA (Grimm, Hunt, Brown, and American Arctic Ltd., No. 1 Mobil-32, T. 25 S. R. 1 E., Section 32), exposure to high temperatures from volcanic activity and faulting may have had negative effects on any previously existing oil and gas accumulations. Unless exploration reveals additional positive information, the potential for petroleum resources in the WSA is low.

##### b. Geothermal

Although geothermal waters are often associated with recent volcanism, exploration in the Aden Lava Flow area has shown that the geothermal potential of this WSA is low despite its recent volcanic activity. Hunt Energy Corporation drilled several geothermal temperature gradient holes near Aden Crater, but only one of these showed higher than normal gradient and heat-flow data, and the anomaly was small. Roger Bowers of Hunt Energy Corporation (1984) believes that the Aden Crater area has little potential for geothermal resources of any type, based upon the data obtained during Hunt's exploration of the area. Although some low-temperature geothermal waters may occur, the depth to these resources (probably 1,500 to 2,000 feet) and the subsequent cost of drilling and pumping the water would probably be economically prohibitive for greenhouse or other space-heating use.

##### 2. Nonenergy Minerals

As of September 17, 1984, there were no mining claims recorded with the BLM within the WSA.



## a. Zeolites

Zeolites, common vug and fracture-filling constituents of basalt, probably occur in the area. The potential for the discovery of zeolites as a mineral resource, however, is low since igneous occurrences of zeolite are generally of small size and low grade (Mumpton 1975).

## b. Decorative Stone

Much of the basalt exposed in the WSA is ideal for use as decorative stone because it is easily broken into thin slabs. There have been several inquiries about this stone in recent years, but due to the interim management regulations for lands under wilderness review, extraction of the material has not been permitted. Transportation of the material from the southeastern part of the WSA to local markets would be easily accomplished by truck; distant markets could be reached by means of the Southern Pacific railroad line that runs along the northeast boundary of the WSA. Although the basalt is present over much of the WSA, accessibility is best along the east and southeast portions of the area, making these the areas of high potential, with the rest of the WSA having moderate to low potential.

Although the potential exists for the development of the Aden basalt as a source of decorative stone, the demand is local and can be satisfied with other types of stone from nearby areas.

## MINERAL RESOURCES POTENTIAL OF THE ADEN LAVA FLOW WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Oil and Gas	Paleozoic source and reservoir rocks exposed to faulting and volcanism	Low	--
Geothermal	Recent volcanism; exploration in the area has had negative results	Low	--
Nonenergy Minerals			
Zeolites	Vesicular basalt flows	Low	--
Decorative Stone	Slab basalt	High Moderate Low	1,200 2,300 --

Note: \*Acreage was not calculated for areas with low potential.



# ADEN LAVA FLOW WSA (NM-030-053)

Proposed Action--All Wilderness Alternative

- WSA Boundary
- BLM
- State

State ownership is identified only inside the WSA boundary.

Scale: 1/2 inch=1 mile

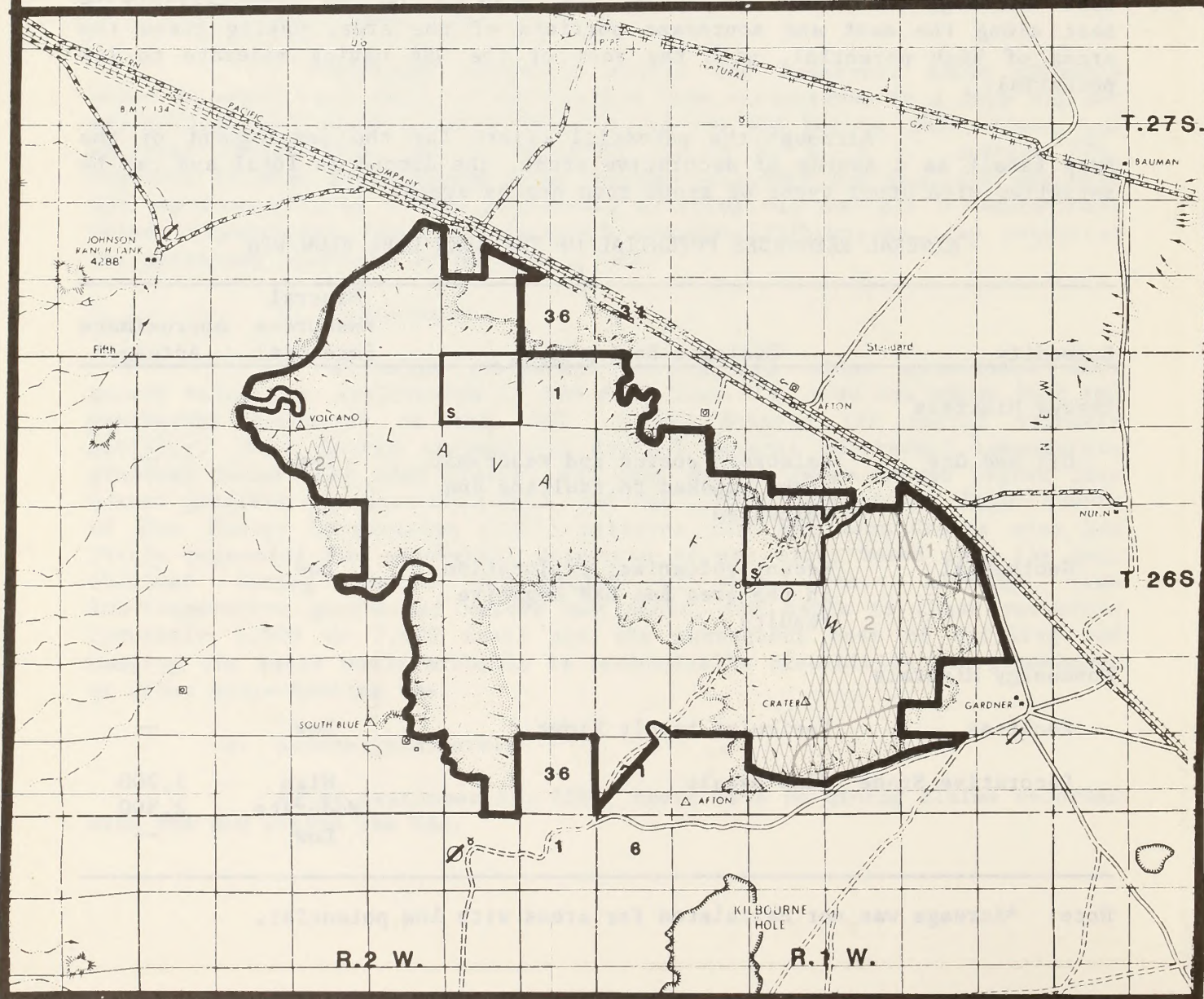
Source: USDI BLM, Las Cruces District, January 1985.

MAP 21-2

MINERAL RESOURCE POTENTIAL

Slab Lava Rock

Areas of high (1) and moderate (2) mineral potential are shown for lands within the WSA; the potential may extend outside the WSA boundary. Areas of low potential are not shown.





# ADEN LAVA FLOW WSA (NM-030-053)

Proposed Action--All Wilderness Alternative

— WSA Boundary

□ BLM

▣ State

State ownership is identified only inside the WSA boundary.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District, January 1985.

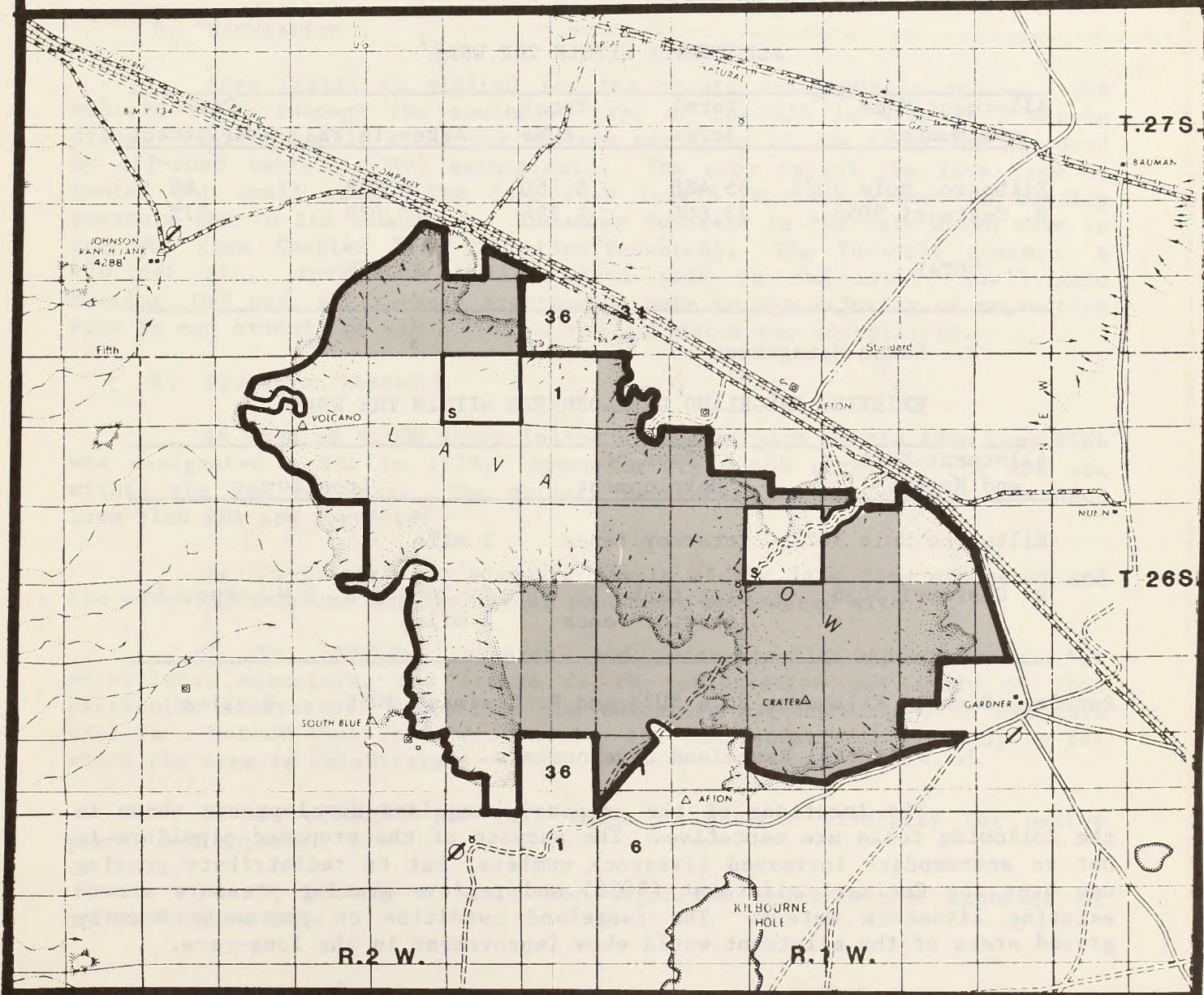
MAP 21-3

MINING CLAIMS AND MINERAL LEASES\*

▣ Post-FLPMA Oil and Gas Leases

FLPMA was passed October 21, 1976.

\*No mining claims were recorded with the BLM within the WSA as of September 17, 1984.





## ADEN LAVA FLOW

### B. Watershed

Water use within the Aden Lava Flow WSA is primarily by livestock and wildlife. A dirt tank is located on a small arroyo along the eastern edge of the WSA.

The WSA lies within the Lower Rio Grande declared underground water basin and ground water use is administered by the New Mexico State Engineer.

### C. Livestock Grazing

#### 1. Allotments

Parts of two grazing allotments are within the Aden Lava Flow WSA. Livestock grazing is limited on the west side of this WSA due to the rough, broken terrain of the lava flow. Licensed grazing use on public land includes cattle and a few horses.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Kilbourne Hole 3023	85,488	5,760	6,828	8%
R. Cosimati 3056	22,000	1,284	17,029	77%
TOTAL			23,857	

#### 2. Ranch Management

#### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
Kilbourne Hole 3023	interior fence	1 mile
R. Cosimati 3056	dirt tank interior fence	T. 26 S., R. 1 W., Sec. 14 4 miles

Boundary Fence: Kilbourne Hole 3023 and R. Cosimati 3056      8 miles

#### 3. Potential Rangeland Developments

The locations of the proposed rangeland developments shown in the following table are tentative. The purpose of the proposed pipelines is not to accommodate increased livestock numbers, but to redistribute grazing use over the Cosimati allotment (3056) and relieve grazing pressure around existing livestock waters. The rangeland condition on presently heavily grazed areas of the allotment would show improvement in the long-term.



PROPOSED RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
R. Cosimati 3056	pipeline	1½ miles-T. 26 S., R. 2 W., Secs. 1, 12
	trough	T. 26 S., R. 2 W., Sec. 12
	pipeline	1 mile-T. 26 S., R. 2 W., Secs. 14, 15
	trough	T. 26 S., R. 2 W., Sec. 14
	pipeline	1½ miles-T. 26 S., R. 1 W., Secs. 17, 18
	trough	T. 26 S., R. 1 W., Sec. 18
	pipeline	1 mile-T. 26 S., R. 1 W., Sec. 23
	trough	T. 26 S., R. 1 W., Sec. 23

Note: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

## D. Recreation

Aden Crater is visited for its scenic and geologic values. The vehicle trail through the southeast part of the WSA is used as a scenic drive. Vehicle trails along the eastern perimeter of the lava flow are used by off-road vehicle (ORV) enthusiasts. The area around the lava flow is hunted for small game. The lava flow itself receives almost no hunting pressure due to its roughness. The Aden Fumarole is the only known cave in the WSA (see Chapter III, Education/Research). The fumarole contains a 120 foot pit. Rockhounds collect lava rock in the area. Small game hunting, ORV use, and weekend sightseeing make up the majority of recreation uses in and around the WSA. Visitor use estimates are unavailable.

## E. Education/Research

An area of 4,008 acres in the northeast part of the Aden Lava Flow was designated a RNA in 1978. Approximately 3,688 acres of the RNA are within the WSA boundary. The primary management objectives for the Aden Lava Flow RNA are fourfold:

1. To preserve an adequate sample of the lava flow ecosystem and the unique geological and biological phenomena associated with it.

2. To provide research and educational opportunities for scientists, educators, and others in the observation and study of this particular ecosystem. Scientists and educators are encouraged to use this area in a manner that is nondestructive and consistent with the purpose for which the area is established.

3. To preserve the full range of genetic diversity for native plants and animals.

4. To provide a basis for organized research and exchange of information on RNAs.



## ADEN LAVA FLOW

Even before this designation, a great deal of research was done in the lava flow. Marsha McKinnerney, Dr. William Reid, and Dr. Richard Smartt of the University of Texas at El Paso have done various studies on carnivores, bats, and other mammals in the lava flow. A number of researchers (Koschmann 1972; Lewis 1951; Prieto and Jacobson 1968; Benson 1932, 1933) have studied melanistic rodents and reptiles in the Aden Lava Flow.

Dr. Reid is also studying the plant-soil relationships in this area and hopes to do further work. Dr. Earl of New Mexico State University has indicated that he makes regular field trips to the lava flow with students from his physical geography, earth science, and geomorphology classes. He also indicated that the area provides opportunities for studies in igneous petrology, volcanism, structural geology, endogenic geomorphology, and Quaternary geomorphology and paleontology. A wide spectrum of biological and geological studies is possible in the future.

A nearly complete, well-preserved giant ground sloth was found in the Aden Fumarole in the late 1920's. The specimen can be seen at the Yale Peabody Museum in New Haven, Connecticut. Other fumaroles could contain well-preserved late Pleistocene fossils.

The RNA has been designated limited to existing roads and trails for ORV use. No motorized cross-country travel is allowed.

### F. Wildlife

There are two quail guzzlers just outside the boundary of the Aden Lava Flow WSA, one on the northwest and one on the northeast side. They are close enough to be water sources for wildlife which live on the lava flow.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

The imprints of man within the 23,857-acre Aden Lava Flow WSA are minimal, consisting of 1 dirt tank, 13 miles of fence, and 6 miles of two-track vehicle trails.

The dirt tank is located just inside the east boundary of the WSA. The fences transect the area north-south and east-west. All have wooden posts which blend in well with the landscape. With the exception of 3 miles of trail extending across the southeast one-third of the WSA, the vehicle trails are located along the perimeter of the lava flow. All of the trails are short and screened topographically.

Due to the low impact and dispersed location of these imprints in relation to the large size and rugged interior relief of the WSA, the cumulative impacts on naturalness are minimal. The quality of the WSA's naturalness is exceptional.

##### b. Solitude

The varied and rugged interior relief of the Aden Lava Flow provides outstanding opportunities for solitude throughout the WSA.

These opportunities are further enhanced by the large size and blocked-up configuration of the WSA. The WSA is approximately 7 miles long and 7 miles wide. Foot access into the area is available from all directions. The size, shape, and accessibility of the area would enable visitors to disperse throughout the WSA to avoid the sights and sounds of others.

Opportunities for solitude are somewhat impacted by the cherry-stemmed road into the Crater. As visitor use via motorized access increases, opportunities for solitude in the Crater would diminish proportionately.

Opportunities for solitude are also occasionally impacted by the outside sounds of trains on the Southern Pacific Railroad along the northeast boundary of the WSA. These impacts are not significant.

Overall, the quality of solitude opportunities in the WSA is excellent.

##### c. Primitive and Unconfined Recreation

Primitive recreation opportunities in the Aden Lava Flow WSA include hiking, backpacking, nature study, and small game hunting.



During the intensive inventory, these opportunities were judged to be less than outstanding.

## 2. Special Features

The Aden Lava Flow contains special ecological and geological features. The area is important from a scientific and educational point of view to study the interactions and interrelationships of the area's geology, soils, flora, and fauna. A portion of the area was designated a Research Natural Area (RNA) in 1978 (see Map 21-1 for a general location of the RNA). Much research has been conducted in the RNA and future projects are planned (see Chapter III, Education/Research).

The Aden Lava Flow exhibits typical lava flow topography (see Chapter I, Climate and Topography). Depressions in the lava flow collect soil and rainwater (see Chapter II, Soils). In these depressions, plant vigor is good and there is a wide diversity of species (see Chapter II, Vegetation). In addition, parts of the lava flow are ungrazed due to the rough topography (see Chapter III, Livestock Grazing). The area provides habitat for a Bureau sensitive plant species proposed for Federal listing and a plant species selected by the New Mexico State Heritage Program as a special concern element (see Chapter II, Vegetation).

A diverse wildlife community is also associated with the lava flow due to the overlap of species from the lava flow and the surrounding desert. Some species exhibit melanism or dark protective coloration (see Chapter II, Wildlife).

## 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

## 4. Diversity

### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Aden Lava Flow WSA as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	18,717
mesquite-acacia savanna	3,879
creosote	1,261



## b. Distance From Population Centers

The Aden Lava Flow WSA is approximately 1 hour driving time from El Paso, Texas; 1 hour from Las Cruces, New Mexico; 5 hours from Albuquerque, New Mexico; 6 hours from Tucson, Arizona; and 8 hours from Phoenix, Arizona.

## B. Manageability

Several characteristics of the Aden Lava Flow WSA contribute favorably to its capability of being managed as wilderness in the long-term. The ruggedness of the lava flow inherently limits and discourages additional rangeland developments, off-road vehicle (ORV) use, and other human intrusions. The WSA's large size and blocked-up configuration enhance the likelihood of the area remaining natural and opportunities for solitude being preserved.

Management of the area as wilderness is minimally complicated by State land. State land within the lava flow limits the degree of BLM control over the WSA (see Map 21-1 for land status). Nonwilderness or incompatible uses on State land would negatively impact wilderness values if development of access required road construction across the lava flow. At the present time, it appears unlikely that mineral development would occur on the State land. However, if the Aden Lava Flow area is designated wilderness, approximately 1,990 acres of State land adjacent to the WSA should have a high priority for acquisition to enhance the area's manageability. The legal description for these lands is as follows.

<u>Legal Description</u>	<u>Acres</u>
T. 25 S., R. 2 W., Section 26, W $\frac{1}{2}$ (that portion south of the railroad tracks)	230
T. 26 S., R. 1 W., Section 16, All	640
T. 26 S., R. 2 W., Section 2, All	640
Section 16, E $\frac{1}{2}$ , E $\frac{1}{2}$ W $\frac{1}{2}$	480
<b>TOTAL</b>	<b>1,990</b>

Continuation of vehicle use on the road into Aden Crater presents a minor manageability concern. As visitor use increases, opportunities for solitude in the Crater would diminish. In addition, the Aden Crater is within the RNA. (See Map 21-1 for the general location of the RNA.) The RNA management plan requires that ORV use be restricted within the RNA. If the area is designated wilderness, the necessity and feasibility of closing and rehabilitating the road should be determined during development of the wilderness management plan.

The Aden Lava Flow WSA could be managed to preserve existing wilderness values in the long-term.



V. CONSULTATION AND COORDINATION

A. Public Involvement Overview

Personal letters, form letters, and petitions were received on the Aden Lava Flow WSA during the public comment periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). This area was among the ten most commented upon proposed WSAs in the State. Maps and detailed narratives were among the data submitted.

Approximately 42 percent of the personal letters favored wilderness review of the Aden Lava Flow. Supporting reasons included the area's large size, apparent naturalness, outstanding opportunities for solitude and primitive recreation, and ecological and geological supplemental values.

Approximately 58 percent of the personal letters opposed wilderness review of the area. Opposing comments cited the roads and other imprints of man's activities as impacting naturalness and described opportunities for solitude as less than outstanding due to the outside sights and sounds of the Southern Pacific Railroad, Interstate 10, and the low level crossings of military aircraft. Aggregate minerals, oil and gas potential, geothermal energy potential, and grazing were identified as resource conflicts. One comment suggested that instead of a WSA designation, the Research Natural Area (RNA) could be expanded or the area could be designated an Area of Critical Environmental Concern (ACEC).

During the public comment period on the New Mexico Wilderness Supplemental Draft Environmental Assessment (BLM 1983), 29 personal inputs, 13 form letters, 1 petition with 15 signatures, and 52 coupons were received indicating support for wilderness designation of the Aden Lava Flow WSA. The form letters, coupons, petition, and 14 of the personal inputs listed no supporting reasons. There were no comments received opposing wilderness designation for the Aden Lava Flow WSA.

Many of the comments favoring wilderness designation were the same as those received in previous comment periods as described above. Several comments were made regarding the size and boundaries of the Aden Lava Flow WSA. One commentator felt that Kilbourne Hole or Phillip's Hole should have been included in the WSA and other inputs indicated support for designation of an area greater than the 23,857-acre WSA.

Several comments pointed out that there is little designated wilderness in southern New Mexico and the Aden Lava Flow is important because of its close proximity to two Standard Metropolitan Statistical Areas (SMSAs)--Las Cruces, New Mexico, and El Paso, Texas.

The New Mexico Department of Game and Fish (NMDGF) indicated agreement with the All Wilderness Alternative, but felt a statement should be included that would allow "in the future the development of water, manipulation of habitat, and allow access to department personnel to manage the wildlife resource."



The New Mexico Department of Agriculture's comments stated that the impacts to the range livestock industry for the Aden Lava Flow WSA were inadequately addressed.

Information was submitted by industry concerning the mineral potential of the Aden Lava Flow WSA.

## B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to locatable and leasable minerals, water, soils, vegetation, wildlife, visual, cultural, air, recreation, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.

### SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Expanding the WSA	The size and boundaries of the WSA were determined by land status and the location of roads. This alternative would have required consideration of lands not originally nominated for wilderness study and therefore unprotected by the BLM Interim Management Policy.
Amended Boundary	An Amended Boundary Alternative was considered during the initial preparation of the WAR for the Aden Lava Flow WSA. Under this alternative, split estate lands (Federal surface/non-Federal subsurface) would have been excluded from that portion of the WSA recommended suitable for wilderness designation to improve manageability. However, the Secretary's Policy Announcement of December 1982 resulted in the deletion of split estate lands from wilderness consideration and eliminated the need for analysis of the Amended Boundary Alternative.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Saleable Minerals (Decorative Slab Basalt)	Although there are approximately 1,200 acres with high potential and 2,300 acres with moderate potential for decorative slab basalt in the Aden Lava Flow, a detailed analysis of the impacts of wilderness designation was not conducted because of the availability of similar materials elsewhere. The impacts on this resource would not be significant.
Livestock Grazing	No significant impacts were identified for livestock grazing; however, this issue will be discussed because of Statewide interest.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.
No Action/No Wilderness	Required by the BLM Wilderness Study Policy.

### Issues Selected for Detailed Analysis

The quality of the Aden Lava Flow WSA's wilderness values was the primary issue identified for the area.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness (Proposed Action)

Under this alternative, the entire 23,857 acres of public land within the Aden Lava Flow WSA would be recommended suitable for wilderness designation. (See Map 21-1 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the BLM's Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. Management of the area as wilderness is slightly complicated by State land. Nonwilderness uses on the State land could degrade natural values, opportunities for solitude and primitive recreation, and special features. The impacts could be minimal to major depending on the location, type, and extent of development and access requirements. However, developments of this nature seem unlikely at the present time. Vehicular use on the cherry-stemmed road into Aden Crater would periodically disrupt solitude in the area in and around the Crater. However, the WSA could be managed to maintain its high quality natural values, outstanding opportunities for solitude, and special ecological and geological features in the long-term.

#### 2. Impacts to Livestock Grazing

Generally, motorized access on the 6 miles of vehicle trails within the designated wilderness would not be permitted. However, if there were no practical alternatives, a permit could be authorized to allow vehicle access along  $\frac{1}{4}$  mile of trail for maintenance of the dirt tank on the Cosimati allotment (3056). The fences in the WSA do not presently have vehicular access and it is unlikely that vehicular access would be authorized should the area be designated wilderness.

The use of motor vehicles on the 6 miles of existing vehicle trails to check cattle would not be allowed. This could cause slight impacts to the livestock operators when monitoring livestock activity and could increase costs depending on the use normally made of the vehicle trails.

Under this alternative, it is assumed that some of the four proposed pipelines and troughs for the Cosimati allotment (3056) would not be implemented because of the cumulative impacts on the naturalness of the WSA. A site-specific environmental assessment (EA) would be prepared to determine if the proposed pipelines are necessary for the purpose of rangeland or wilderness protection. The EA would also be used to determine how many of the proposed pipelines could be implemented and their locations.



B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 23,857 acres of public land within the Aden Lava Flow WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III. The Aden Lava Flow RNA would be managed according to the objectives outlined in Chapter III, Education/Research.

1. Impacts to Wilderness Values

The natural values, outstanding opportunities for solitude, and special ecological and geological features of the Aden Lava Flow WSA would not be protected through Congressional designation. Management of the area as specified in land use plans would be subject to administrative change in the long-term.

The extraction of slab lava rock for decorative stone could occur on the approximately 1,200 acres with high potential and 2,300 acres with moderate potential for mineral material sales. These activities would degrade natural values and opportunities for solitude in the east-central and southeast parts of the WSA. The impacts of extracting slab lava rock could be minimal to major depending on the extent of the activities and access requirements.

The installation of all four proposed pipelines and troughs on the Cosimati allotment (3056) could be authorized. The additional imprints of man would cumulatively degrade the natural values of the WSA.

Continued ORV access on vehicle trails along the northeast edge of the lava flow and on the vehicle trail through the southeast part of the WSA would periodically disrupt the solitude in these areas.

The impacts to wilderness values could be significant in the long-term under this alternative.

2. Impacts to Livestock Grazing

All proposed rangeland developments could be constructed. Rangeland developments could be checked and maintained on a convenience basis using motorized equipment. No impacts to livestock grazing would occur under this alternative.







## APPENDIX 22

### ALAMO HUECO MOUNTAINS WSA (NM-030-038)

#### I. GENERAL DESCRIPTION

##### A. Location

The Alamo Hueco Mountains Wilderness Study Area (WSA) is located in southeastern Hidalgo County in the "bootheel" part of New Mexico. The WSA is approximately 70 miles south-southeast of Lordsburg, New Mexico.

The U.S. Geological Survey (USGS) topographic map covering the WSA is the Dog Mountains, New Mexico quadrangle at the 15-minute scale.

##### B. Climate and Topography

The Alamo Hueco Mountains WSA is characterized by an arid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is 9 to 10 inches, with locally larger amounts at higher elevations. A wide variation in annual precipitation is characteristic of arid climates. More than half of the moisture normally falls during July, August, and September from convective thundershowers that are commonly intense and of short duration.

During the summer months, daytime temperatures quite often exceed 100°F at elevations below 5,000 feet. The average monthly maximum temperature during July, the warmest month, is in the upper 90's. In January, the coldest month, the average monthly minimum temperature is in the upper 20's. Slightly cooler temperatures can be expected throughout the year at higher elevations.

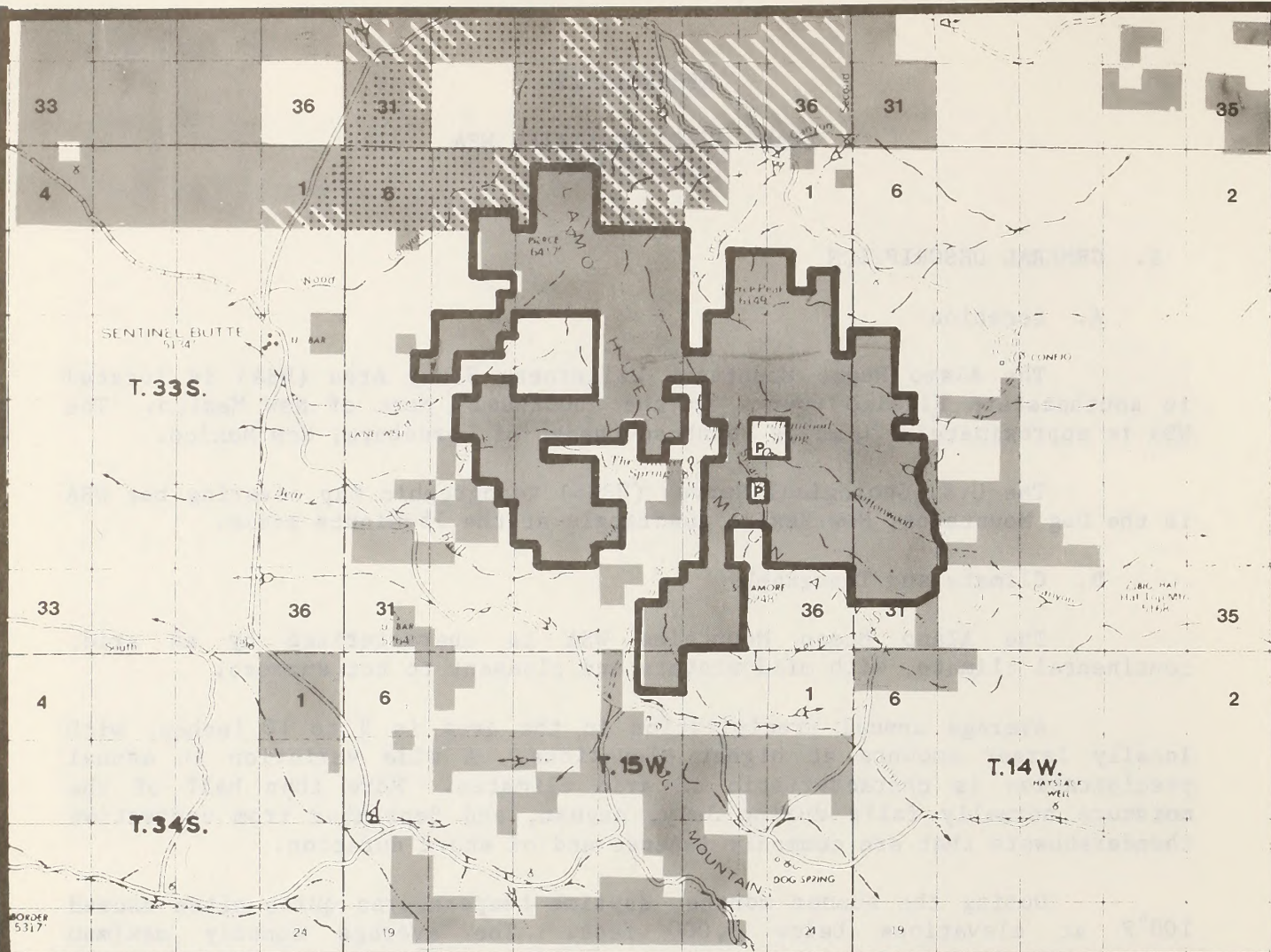
Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

This WSA contains most of the Alamo Hueco Mountains. The Alamo Hueco Mountains are highly eroded volcanic mountains characterized by mesas and vertical cliffs with long, sinuous canyons. Elevations range from about 4,800 feet on the pediment slopes to 6,838 feet at the unnamed peak at the head of Black Canyon. The WSA encompasses most of Cottonwood Canyon, and portions of Black Canyon and Horse Canyon.

##### C. Land Status

The WSA contains 10,796 acres of public land. There are 200 acres of private land within the WSA boundary. (See Map 22-1 for land status.)





## ALAMO HUECO MOUNTAINS WSA (NM-030-038)

Proposed Action--No Action/No Wilderness Alternative

— WSA Boundary

□ BLM

□ Private

MAP 22-1  
LAND STATUS

▤ Lands Removed from WSA Status  
after Reinventory

▨ BLM Surface/Non BLM Subsurface

Private ownership is identified only inside  
the WSA boundary.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces  
District, January 1985.



D. Access

There is no legal access to the Alamo Hueco Mountains WSA. The WSA is physically accessible on the west by a ranch road branching off State Highway 81, approximately 33 miles south-southwest of Hachita. Permission must be obtained from the private landowner, the Pacific Western Land and Cattle Company--U-Bar Division, to cross the private land surrounding the WSA.



Overview of the Alamo Hueco Mountains WSA.



E. Proposed Action, Alternatives, and Issues

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Action/No Wilderness (Proposed Action)
°Manage 11,796 acres as wilderness.	°Manage 11,796 acres without wilderness protection.
-Close 6 miles of vehicle trails.	-Vehicle use would be allowed to continue.
-Require permits for vehicular access to 3 dirt tanks and 1 spring.	
-11,796 acres would be closed to future oil and gas leasing and mining claim location.	-11,796 acres would be open to oil and gas leasing with a protective stipulation for wildlife (desert bighorn sheep).  -11,796 acres would be open to mining claim location.
-Mineral exploration or development is possible on valid existing claims and leases, but unlikely because of low potential.	-Mineral exploration or development is possible, but unlikely because of low potential.
-Attempts would be made to acquire 640 acres of State land, 13,200 acres of private land, and 3,040 acres of non-Federal subsurface (mineral) estate to improve manageability.	-No special attempts would be made to acquire State and private lands.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
-Desert bighorn sheep could be transplanted in the area.	-Desert bighorn sheep could be transplanted in the area.
-Helicopter access to construct wildlife waters could be approved.	-Helicopter access to construct wildlife waters would be approved.
-Projects proposed in the HMP would require State Director approval.	-Projects proposed in the HMP would not require State Director approval.



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues Wilderness Values
All Wilderness (10,796 acres)	Although wilderness designation would mandate protection and maintenance of the existing wilderness values within the area, development of the surrounding private land could degrade the natural values, outstanding opportunities for solitude, and special ecological and scenic features of the WSA. Land status patterns would restrict the availability of the area for primitive recreation. The area could not be managed as wilderness in the long-term.
No Action/No Wilderness (10,796 acres) (Proposed Action)	Wilderness values would not receive long-term Congressional protection. Although the area would probably retain its wilderness values in the short-term, degradation of natural values, outstanding opportunities for solitude and primitive recreation, and ecological, cultural, and scenic special features could result from oil and gas exploration or new rangeland developments.



## II. EXISTING RESOURCES

### A. Geology

The Alamo Hueco Mountains WSA lies within the Basin and Range physiographic province. This province is characterized by fault block mountains separated by basins filled with alluvial and shallow lake sediments. The Alamo Hueco Mountains are a horst block, bordered by the Playas Valley to the west and the Hachita Valley on the east.

There is little direct geologic evidence in the Alamo Hueco Mountains concerning events prior to the late Cretaceous period. The regional model suggests shallow marine sedimentation in the late Paleozoic Pedregosa Basin followed by erosion or nondeposition during early and middle Mesozoic times. Marine sediments were again deposited in Cretaceous times by northward advancing seas.

The Alamo Hueco Mountains consist of layered volcanic flows ranging in age from late Cretaceous to mid-Tertiary. The flows are of varying composition and are represented by numerous ash flows and andesitic flows, most of which are thought to have their origin in volcanic centers to the west (Erb 1979; Reiter 1980). Many of the formations can be correlated with formations to the west in the Animas, San Luis, and Pyramid Mountains.

Basin and Range tensional forces uplifted the Alamo Hueco fault block and produced the fault and joint patterns evident today. Basin and Range faulting appears to have extended into mid-Tertiary times. Erosion of the uplifted Alamo Hueco horst block has resulted in the present day topography.

### B. Water

The Alamo Hueco Mountains WSA is situated within the Playas Basin, a noncontributing, closed basin. Drainage is towards the Playas Valley to the west and the Hachita Valley to the northeast. Ground water quality in both valleys is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

Principal ephemeral streams to the west include Black, Bear, and Bull Creeks. These stream channels of the mountain canyons become indistinct along the lower alluvial fan slopes and follow a shallow course northward to Hatchet Gap. Several ephemeral streams drain the northeast side of the WSA onto the Hachita Valley. They include Cottonwood, Sycamore, and Horse Canyons. Sheet flow predominates as the channels become less distinct near the valley floor, and follows a slight gradient to the southeast towards the Mexican border. Surface flows in the ephemeral streams generally occur as a result of summer thundershowers.

### C. Soils

Soils of the Alamo Hueco Mountains WSA were derived primarily from igneous parent bedrock types. The three major soil types occurring within



the WSA are dependent on the landform on which they occur. The most prevalent soil type occurs on steep hillsides where soils are shallow and stony. Exposed bedrock outcropping is common with the soil material being interspersed between the areas of rock outcropping. At lower elevations on mountain footslopes, soils are moderately deep to deep and typically are very gravelly on the surface.

#### D. Vegetation

##### 1. General

The vegetation and associated range sites within the Alamo Hueco Mountains WSA consist of four types:

Vegetation Type	Range Site	Federal Acres
Juniper-oak brush	Mountains	10,675
Creosote	Gravelly	25
Mixed desert shrub	Gravelly loam	20
Deciduous trees	Gravelly sand	76

Juniper trees, oak brush, ocotillo, and sumac occur in the higher elevations and in protected canyons. Grass species (muhlys, gramas, threeawns, and tobosa) with other shrubs such as yucca, snakeweed, and mesquite occur on the mountain slopes down to the lower elevations.

Creosote is the dominant vegetation on gravelly sites in the flat areas located on the northern edge of the WSA. Associated shrub species are tarbush, mesquite, mariola, acacia, and snakeweed. Tobosa grass occurs in patches.

Mixed desert shrubs are the dominant vegetation on the gravelly loams in the southern part of the WSA. Vegetation is predominantly snakeweed, mesquite, tarbush, mariola, and creosote. Tobosa grass occurs in patches.

Deciduous trees and shrub species such as Arizona walnut, oak, hackberry, mesquite, box elder, seepwillow, and acacia occur on gravelly sands in the canyon bottoms. These are pseudoriparian areas and were identified as special habitat for wildlife.

##### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.



## ALAMO HUECO MOUNTAINS

Species: Coryphantha scheeri - Scheer pincushion cactus  
Status: There are three varieties; two are Federal candidate species.  
Habitat: Open plains and flats; often in alluvial soils, 3,000-5,000 feet.

Species: Ferocactus wislizenii - southwestern barrel cactus  
Status: Selected by New Mexico State Heritage program as a special concern element.  
Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

Species: Penstemon lanceolatus - scarlet tube beardtongue  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Uncommon, scattered on southwest facing slopes and in rocky canyons under mountain mahogany, juniper, and oak. Also occurs in open areas.

### E. Wildlife

#### 1. General

A number of factors combine in the Alamo Hueco Mountains to make it an extremely valuable area for wildlife. There are several habitat sites in the Alamo Hueco Mountains; grass mountain and mixed shrub mountain are the largest. Canyons which have patches of riparian vegetation such as sycamore trees intersect the mountain range. Springs and windmills are found in these areas. Although most of the canyons and the riparian habitat are on private land and outside the WSA boundary, they still strongly influence the wildlife within the WSA because of the close availability of water, cover, and food.

There are many cliffs and caves in the range. The area is isolated and very close to the Mexican border. These features also contribute to the unusual wildlife community. Golden eagles and red-tailed hawks are known to nest in the cliffs and prairie falcons probably do also (BLM 1981).

A good-sized population of javelina is found in the Alamo Hueco Mountains. In New Mexico, this species is only found in the southwestern part of the State.

Judging by reported mountain lion sightings in the area, this species also has a viable population in and around the WSA. Mountain lions have large home ranges, so there would not be many resident animals within the WSA; however, juveniles without territories might frequently travel through the area.

Other game species in the WSA are mule deer (more common at the edges of the area) and Montezuma quail. The latter are seen only infrequently.



A variety of nongame mammals, birds, reptiles, and amphibians have been recorded in the WSA.

## 2. Threatened or Endangered Fauna Species

Several threatened or endangered animal species have been verified in the Alamo Hueco Mountains and several more may be found there.

Historically, desert bighorn sheep, a State-listed endangered species, were reported in the area. There are also several recent sightings, but evidence that they use the area is inconclusive (BLM 1980).

Other State endangered species reported in or near the WSA are the coatimundi, the thick-billed kingbird, the varied bunting, and possibly the giant spotted whiptail. All of these were reported from waters or riparian areas in the canyons, which are outside the WSA boundary. However, these areas are so intermingled with Federal land that the endangered animals might be found within the WSA (BLM 1981; Hayward et al. n.d.; Hubbard et al. 1979).

A Federally-listed species, the gray wolf, was historically found in the WSA. There have been unverified sightings of wolves over the last 10 years in the New Mexico "bootheel", but there is no reason to think they are in the Alamo Hueco Mountains on a regular basis (Carley 1982; Hayward et al. n.d.).

### F. Visual

The Alamo Hueco Mountains have a Class A (high) scenic quality rating. The landform of the mountains consists of rough, craggy mesas with crumbling outcrops. The line in the landform consists of inclined or horizontal bands. Landform colors are a variety of deep shades of reddish-brown. Vegetation occurs in alternating bands of greenish-gray.

The Alamo Hueco Mountains are in a Visual Resource Management (VRM) Class II.

### G. Cultural

Known prehistoric sites in and around the WSA consist of a number of very significant cave sites with stratified deposits and a series of camp sites in the flat valley bottoms. The caves in these mountains have been identified as an area eligible for the National Register of Historic Places as an archaeological district. Some of the caves are significant on the national level because they contain stratified deposits that have materials in them that usually are not found in exposed sites (e.g., basketry, cloth, vegetable remains, and other perishables). In addition, cave sites are very rare in this portion of the Southwest. These caves can provide significant information concerning little known artifact types and prehistoric environmental data.

Historically, the mountains were first visited by the Spanish in a military campaign led by Hugh O'Connor in 1774. Later, there was



## ALAMO HUECO MOUNTAINS

considerable homesteading in the mountains and they were used during Pershing's incursion into Mexico.

### H. Air

Generally, the quality of air within the Alamo Hueco Mountains WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Emissions from the Phelps-Dodge Copper Smelter, located approximately 5 miles northwest of the WSA in the Playas Valley, could slightly lower the air quality of the area. This could only occur if weather conditions are such that lower quality air is trapped by an inversion layer which eventually drifts over the WSA.

The only other major degradation of air quality occurs during the spring months (March-May), when west-prevailing winds (commonly gusting in excess of 30 mph) result in dust storms throughout the southern part of the State.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

Map 22-2 shows the approximate locations of mining claims and lands under mineral leases.

##### 1. Energy Minerals

A protective stipulation is presently attached to all energy minerals leases let within the WSA. The primary purpose of the stipulation is to protect the desert bighorn sheep and its habitat. The Alamo Hueco Mountains WSA is wholly within the desert bighorn sheep habitat area. The stipulation generally states that surface use or occupancy could be prohibited or restricted if such use or occupancy would adversely affect the desert bighorn sheep or its habitat.

There is one post-Federal Land Policy and Management Act (FLPMA) oil and gas lease in the WSA.

##### a. Oil and Gas

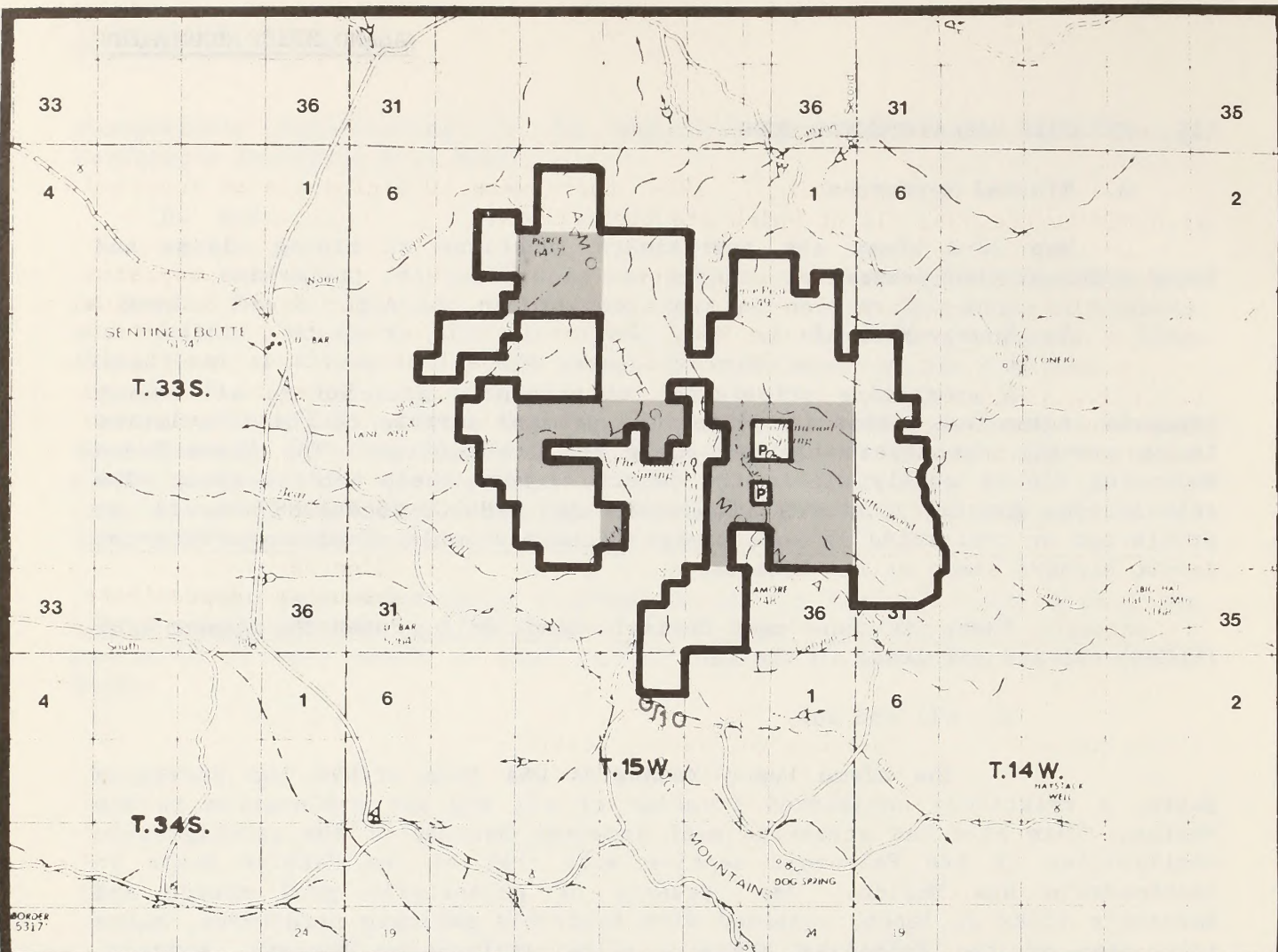
The Alamo Hueco Mountains WSA lies within the Pedregosa Basin, a relatively unexplored frontier of oil and gas exploration in New Mexico. This area has attracted much interest because of the stratigraphic similarities of its Paleozoic section with that of the Permian Basin in southeastern New Mexico. The presence of potentially good source and reservoir rocks at depth, combined with favorable geologic structures, makes this area of the Pedregosa Basin a prime exploration target. However, structural complexities and thick deposits of Tertiary volcanic rocks are limiting factors in possible petroleum occurrences in this region.

Although much of the pediment and bolson area adjacent to the WSA does have oil and gas potential, most of the WSA does not appear to be favorable due to the thick sequence of volcanic rocks in the Alamo Hueco Mountains. The Humble No. 1 State well which was drilled about 3 miles northwest of the WSA to a depth of 14,585 feet, had a reported gas flow of 500,000 cubic feet per day (Greenwood 1970). Several energy companies (including ARCO, Exxon, Texaco, May, Placid, and Getty) have expressed interest in the Alamo Hueco vicinity. Geophysical exploration has occurred on pediments adjacent to the WSA. Low-lying areas within the WSA nearest the pediment have a low potential for oil and gas. These areas are too near the thick volcanic core of the Alamo Hueco Mountains to warrant a higher rating.

##### b. Geothermal

Travertine deposits in the Alamo Hueco Mountains area may indicate a potential for geothermal energy; however, in the absence of other favorable geologic indicators, the potential appears to be low.





# **ALAMO HUECO MOUNTAINS WSA (NM-030-038)**

**Proposed Action--No Action/No Wilderness Alternative**

MAP 22-2

— WSA Boundary

□ BLM

□ Private

## **MINING CLAIMS AND MINERAL LEASES**

■ Post-FLPMA Oil and Gas Lease

1/ Pre-FLPMA Mining Claims per section

1 Post-FLPMA Mining Claims per section

Private ownership is identified only inside the WSA boundary.

(Claim information from BLM records dated September 17, 1984; claims which overlap more than one section are counted in each section in which they occur.)

Scale: 1/2 inch=1 mile

FLPMA was passed October 21, 1976.

Source: USDI BLM, Las Cruces District, January 1985.



## 2. Nonenergy Minerals

As of September 17, 1984, there were 10 mining claims recorded with BLM in the WSA, all of which are post-FLPMA.

Minor manganese mineralization occurs with travertine deposits in the Bluff Creek formation in the area between the Alamo Hueco Mountains and Dog Mountains south of the WSA. Psilomelane bands up to 1 inch thick are present in 2-3 foot beds of travertine. A small prospect pit was dug in T. 34 S., R. 15 W., Section 11, SE $\frac{1}{4}$ , south of the WSA. However, there are no known manganese occurrences in the WSA. The potential for manganese resources in the WSA is low.

## MINERAL RESOURCES POTENTIAL OF THE ALAMO HUECO MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Oil and Gas	Tertiary volcanics; possible underlying Paleozoic sediments	Low	--
Geothermal	Tertiary volcanics; travertine	Low	--
Nonenergy Minerals			
Manganese <sup>a/</sup>	Tertiary volcanics; travertine	Low	--

Notes: \*Acreage was not calculated for areas with low potential.

<sup>a/</sup>Listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.

## B. Watershed

Water use within the Alamo Hueco Mountains WSA is primarily by livestock and wildlife. There is one dirt tank inside the WSA that utilizes surface runoff to provide water for livestock and wildlife. Several springs are found in canyons of the Alamo Hueco Mountains that support riparian vegetation important for wildlife, however, they are located on private land adjacent to the WSA boundary. Additionally, several well facilities and dirt tanks for livestock watering and limited domestic use are located just outside the WSA boundary.

## C. Livestock Grazing

## 1. Allotments

Parts of two grazing allotments are within the Alamo Hueco Mountains WSA. These allotments are part of the Pacific Western/Phelps-



## ALAMO HUECO MOUNTAINS

Dodge Corporation's U-Bar Ranch. Some areas in the WSA are ungrazed due to the steep slopes and distance from livestock water developments. Licensed grazing use on public land includes cattle and a few horses.

### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
U-Bar 1510	19,896	4,548	10,405	52%
U-Bar 2022	39,006	7,608	391	1%
TOTAL			10,796	

### 2. Ranch Management

#### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
U-Bar 1510	dirt tank	T. 33 S., R. 15 W., Sec. 28
U-Bar 2022	interior fence	2½ miles

Note: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

### D. Education/Research

If desert bighorn sheep are reintroduced into the area, it is possible that a New Mexico State University graduate student would do a research monitoring project on them. There is a possibility of paleoenvironmental studies in some of the dry caves and rock shelters by Dr. Thomas VanDevender of the University of Arizona.

### E. Wildlife

The New Mexico Department of Game and Fish plans to reintroduce desert bighorn sheep into the Alamo Hueco Mountains in the near future (Sandoval 1982). There are no wildlife developments in the WSA at this time, but the Big Hatchets-Alamo Huecos Habitat Management Plan (BLM 1982) contains proposals to construct water developments for desert bighorn sheep, control predators, maintain artificial mineral licks, and possibly manipulate vegetation through controlled burns after sheep are transplanted in the area. It may be necessary to allow access by helicopter for construction of these waters.

Six windmills and three springs are located on private land, less than ½ mile from the WSA. As mentioned in Chapter II, Wildlife, these are used by wildlife in the WSA.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

###### a. Naturalness

The Alamo Hueco Mountains WSA generally appears natural. Imprints of man on public land within the WSA consist of a dirt tank and two-track vehicle trails in drainages. These imprints are substantially unnoticeable due to the topographic screening provided by the rugged terrain. Rangeland developments outside the WSA boundary on private land in Horse Canyon, Emory Canyon, and on Bull Creek are also substantially unnoticeable because of topographic screening. The outstanding scenic values of the Alamo Hueco Mountains further enhance the area's natural character.

###### b. Solitude

Outstanding opportunities for solitude exist throughout the Alamo Hueco Mountains. These opportunities are primarily a result of the rugged topography. The Alamo Hueco Mountains are dissected by numerous steep canyons which provide excellent opportunities to escape the sights and sounds of others. Although not all of the major canyons are Federally-owned, outstanding opportunities for solitude are available within the WSA.

###### c. Primitive and Unconfined Recreation

The Alamo Hueco Mountains offer outstanding opportunities for primitive and unconfined recreation. The scenery, geology, vegetation, wildlife, and cultural values of these mountains result in an exceptional primitive recreation resource. Specific opportunities include hiking, nontechnical rock climbing, backpacking, hunting, photography, and sightseeing.

These opportunities are limited only by the land ownership patterns surrounding the WSA. Because of the convoluted public land configuration, it is difficult for visitors to fully utilize the recreation resources of the Alamo Hueco Mountains or to be ensured of access to the area.

##### 2. Special Features

The Alamo Hueco Mountains WSA contains special ecological, cultural, and scenic features.

The ecological features include both vegetation and wildlife values of scientific and educational interest. The Alamo Hueco Mountains provide habitat for one Bureau sensitive plant species proposed for Federal listing, one Federal candidate plant species, and two plant species selected



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by the New Mexico State Heritage Program as special concern elements (see Chapter II, Vegetation). The Alamo Hueco Mountains are an extremely valuable area for wildlife and support a variety of game and nongame species. The number of habitat sites in the WSA, the special habitat features such as cliffs and caves, and the isolation of the area and its proximity to the Mexican border all contribute to its value for wildlife. Five State endangered animal species have been reported in or near the area (see Chapter II, Wildlife).



Cougar hunter in the Alamo Hueco Mountains.

The cultural features of the Alamo Hueco Mountains WSA are also of scientific and educational value. Caves in and around the WSA have been identified as eligible for the National Register of Historic Places as an archaeological district (see Chapter II, Cultural).

The Alamo Hueco Mountains also have outstanding scenic features with a Class A (high) scenic quality rating (see Chapter II, Visual).

Future projects of scientific and educational value planned in this WSA include reintroduction of desert bighorn sheep and paleoenvironmental studies in dry caves and rock shelters (see Chapter III, Wildlife and Education/Research).



### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Alamo Hueco Mountains WSA as being in the Mexican Highlands Shrubsteppe Province with a potential natural vegetation of oak-juniper woodland.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

Vegetation Type	Acres
oak juniper woodland scrub	10,675
creosote	25
Trans-Pecos shrub savanna	20
northern flood plain forest	76

#### b. Distance From Population Centers

The Alamo Hueco Mountains WSA is approximately 4 hours driving time from El Paso, Texas; 3 hours from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.

### B. Manageability

The manageability of the Alamo Hueco Mountains WSA is significantly affected by the surrounding land status patterns.

The land status in the Alamo Hueco Mountains is a mosaic of private and public lands. As a result, the WSA boundary is very convoluted, consisting of many "fingers" of public land surrounded by private land. Nonwilderness or nonconforming uses such as proliferation of grazing developments or oil and gas exploration and drilling would be expected on the adjacent private land in the long-term and could negatively affect the naturalness of the WSA, opportunities for solitude, and the supplemental values of the area. Opportunities for primitive recreation are negatively impacted by the convoluted boundary in that it is almost inevitable that a visitor hiking through the area must hike across private land.

Because of the convoluted land status patterns in and around the Alamo Hueco Mountains WSA, the BLM could not reasonably manage the existing



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area to preserve its wilderness characteristics over the long-term. Management of the Alamo Hueco Mountains as wilderness would require acquisition of surrounding non-Federal lands. Should the area be designated wilderness, the lands legally described below should be considered for voluntary acquisition.

<u>Legal Description</u>	<u>Acres</u>
State Land	
T. 32 S., R. 15 W., Section 32, All	640
Private Land	
T. 33 S., R. 14 W., Section 7, NW $\frac{1}{4}$ , S $\frac{1}{2}$	480
Section 8, SW $\frac{1}{4}$	160
Section 17, All	640
Section 18, N $\frac{1}{2}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$	400
Section 19, NE $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$	120
Section 20, S $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$	240
Section 29, N $\frac{1}{2}$ SW $\frac{1}{4}$	80
Section 31, SW $\frac{1}{4}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$	240
T. 33 S., R. 15 W., Section 2, E $\frac{1}{2}$ , S $\frac{1}{2}$ SW $\frac{1}{4}$	400
Section 3, NE $\frac{1}{4}$ SW $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$	80
Section 7, NE $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$ , W $\frac{1}{2}$ , SE $\frac{1}{4}$	600
Section 8, W $\frac{1}{2}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$	440
Section 11, N $\frac{1}{2}$ NE $\frac{1}{4}$ , W $\frac{1}{2}$	400
Section 12, NE $\frac{1}{4}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ SE $\frac{1}{4}$	240
Section 13, E $\frac{1}{2}$ NE $\frac{1}{4}$	80
Section 14, W $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$	120
Section 15, SE $\frac{1}{4}$ SE $\frac{1}{4}$	40
Section 16, All	640
Section 17, SE $\frac{1}{4}$ NE $\frac{1}{4}$ , SW $\frac{1}{4}$ SW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$	240
Section 18, N $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ , W $\frac{1}{2}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$	560
Section 19, All	640
Section 20, W $\frac{1}{2}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$	160
Section 21, NE $\frac{1}{4}$ SW $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$	120
Section 22, SE $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$	280
Section 23, SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SW $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$	320
Section 24, SW $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$	80
Section 26, NE $\frac{1}{4}$ NE $\frac{1}{4}$ , W $\frac{1}{2}$ W $\frac{1}{2}$ , SE $\frac{1}{4}$	360
Section 27, NW $\frac{1}{4}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ SW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$	440
Section 28, SW $\frac{1}{4}$ SW $\frac{1}{4}$	40
Section 29, NW $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ , NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ , E $\frac{1}{2}$ SE $\frac{1}{4}$	320
Section 30, S $\frac{1}{2}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$	120
Section 32, All	640
Section 33, All	640
Section 34, N $\frac{1}{2}$ NE $\frac{1}{4}$ , SW $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$	320
Section 35, E $\frac{1}{2}$ E $\frac{1}{2}$	160
Section 36, All	640



<u>Legal Description</u>	<u>Acres</u>
Private Land (continued)	
T. 34 S., R. 14 W., Section 6, SW $\frac{1}{4}$	160
T. 34 S., R. 15 W., Section 1, All	640
Section 2, All	640
Section 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$	280
TOTAL	13,200
Non-Federal Subsurface (Mineral) Estate	
T. 32 S., R. 15 W., Section 27, W $\frac{1}{2}$ NW $\frac{1}{4}$	80
Section 28, E $\frac{1}{2}$	320
Section 29, N $\frac{1}{2}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SW $\frac{1}{4}$	120
Section 30, N $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$	240
Section 31, E $\frac{1}{2}$ NE $\frac{1}{4}$	80
Section 33, NE $\frac{1}{4}$ NE $\frac{1}{4}$	40
Section 34, All	640
Section 35, S $\frac{1}{2}$ S $\frac{1}{2}$	160
T. 33 S., R. 15 W., Section 2, NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$	240
Section 3, N $\frac{1}{2}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ , S $\frac{1}{2}$ SW $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$	560
Section 4, N $\frac{1}{2}$ N $\frac{1}{2}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$	280
Section 5, E $\frac{1}{2}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ SW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$	280
TOTAL	3,040



V. CONSULTATION AND COORDINATION

A. Public Involvement Overview

Personal letters, form letters, and petitions were received on the Alamo Hueco Mountains WSA during the public comment periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). Maps, photographs, road affidavits, and data on the Pedregosa Basin were included with the comments.

Approximately 60 percent of the personal letters favored wilderness review of the area. Supporting comments cited the size, naturalness, and outstanding opportunities for solitude and primitive recreation as justification. The area's outstanding scenery, cultural values, and abundance of wildlife species were listed as supplemental values.

Approximately 40 percent of the personal letters opposed wilderness review. Existing rangeland developments and access routes were cited as impacts on naturalness. The irregular shape of the WSA and land status patterns were identified as manageability problems. Another comment suggested that wilderness designation would attract many visitors resulting in overuse and deterioration of the wilderness resource. Oil and gas potential and mining were listed as resource conflicts.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983), 21 personal letters, 4 form letters, 1 petition with 15 signatures, and 52 coupons were received indicating support for wilderness designation of the Alamo Hueco Mountains WSA. The form letters, petition, coupons, and five of the personal letters listed no supporting reasons.

Several of the comments favoring wilderness designation reiterated supporting reasons mentioned in previous public review periods such as natural values, and solitude and primitive recreation opportunities. Several respondents indicated support for wilderness designation of an area other than the 10,796-acre WSA. The acreage figures cited ranged from 10,000 to 25,000 acres. There were no maps or discussions of alternative boundaries included with these comments.

Many of the pro-wilderness comments addressed the special features of the Alamo Hueco Mountains WSA. These comments cited the area's scenic, geologic, cultural, wildlife, and botanic values as reasons for favoring wilderness designation. These comments noted that the area "is uniquely situated with respect to transitional ecological zones" and is "extremely valuable for endangered species."

Several respondents commented on specific manageability issues analyzed in the Wilderness Analysis Report (WAR). Comments regarding the area's lack of legal access consisted of the following observations: "legal access could easily be arranged via swaps or easements" and "the lack of legal access is of benefit because of the added protection it provides for the area." Several respondents acknowledged the potential manageability



conflicts caused by land status patterns and the area's resulting convoluted boundary and suggested that the area offers "an excellent opportunity for land exchanges to create wilderness."

Pro-wilderness comments on the area's oil and gas potential generally reflected the attitude that the WSA should be protected and mineral resources developed elsewhere.

Four personal letters were received in opposition to wilderness designation of the Alamo Hueco Mountains WSA. Two of these public inputs listed no reasons. Other comments cited the mineral potential of the area as justification for a nonsuitable wilderness recommendation.

The Phelps-Dodge Corporation submitted a voluminous document including photos and maps. Many of the comments in the document submitted by Phelps-Dodge addressed what they considered deficiencies in the New Mexico Wilderness Supplemental Draft Environmental Assessment (BLM 1983). Only those substantive comments addressing the Alamo Hueco Mountains WAR are summarized here.

Phelps-Dodge disagreed with the discussion of impacts to wilderness values if the area were left open for mineral activities as described under the No Action/No Wilderness Alternative. The Phelps-Dodge comments stated that the discussion failed to acknowledge that "only a small fraction of these areas would even be touched by any mineral activity" and "most areas which are affected are touched only by exploration activities which are easily rehabilitated." In addition, Phelps-Dodge comments asserted that the document should at least recognize that the extent of disturbance caused by both hard rock and leasable mineral activities can be closely controlled by the BLM regulations applying to those activities.

Phelps-Dodge suggested that the discussion of Energy Minerals in Chapter III be clarified to indicate that potentially good oil and gas lands lie within the WSA boundary. Phelps-Dodge also disputed statements in this section of the Draft WAR that some geophysical exploration programs in the Alamo Hueco Mountains have been suspended because of the high cost of exploration on private land. Phelps-Dodge also indicated strong agreement with the BLM's evaluation of the WSA's manageability.

Two respondents made general comments indicating that in lieu of wilderness designation, the area should receive some form of special designation. The New Mexico Natural History Institute indicated that they "would like to see a special wildlife protection area or perhaps a research natural area in about 4,000 acres of the Alamo Hueco Mountains." Another comment stated that "Although BLM is not proposing the Alamo Huecos as wilderness, I urge you to retain its natural features and archaeological values under BLM's administrative regulations."

#### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were



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raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to water, soils, vegetation, wildlife, visual, cultural, air, recreation, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.

### SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Expanding the WSA	This was not considered further because it would require consideration of lands not nominated for wilderness study and lands not protected by the BLM Interim Management Policy.
Designation of All or a Portion of the WSA as a Research Natural Area (RNA)	Certain management commitments made in the Big Hatchets-Alamo Huecos Habitat Management Plan, such as predator control, establishment of wildlife waters and mineral licks, and vegetation manipulation through controlled burns, would be in direct conflict with the objectives for a RNA.
Designation of the WSA as an Area of Critical Environmental Concern (ACEC) for Cultural Resources	It is not known exactly which cultural sites in the Alamo Hueco Mountains are on public land and special management of the public land is not needed at this time.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Minerals	Although mineral resources were identified in the Las Cruces District EA and WAR as a significant issue, further evaluation shows there are no significant impacts to minerals because of low potential.
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Action/No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

### Issues Selected for Detailed Analysis

Wilderness values and the effect of the land status patterns on wilderness manageability are the primary issues identified for this WSA.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 10,796 acres of public land within the Alamo Hueco Mountains WSA would be recommended suitable for wilderness designation. (See Map 22-1 for WSA boundary.)

If the WSA is designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the BLM's Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the area's existing natural values, outstanding opportunities for solitude and primitive recreation, and special ecological, cultural, and scenic values with long-term Congressional protection. However, due to the surrounding private land, the Alamo Hueco Mountains WSA could not be managed to preserve the existing wilderness resources in the long-term. Because of the surrounding area's oil and gas potential, the petroleum industry's interest in the area, and the area's use for livestock grazing, it is expected that oil and gas exploration drilling or construction of additional rangeland developments would occur on the adjacent private land in the long-term. The outside sights and sounds of nonwilderness uses on the adjacent private land could degrade natural values, opportunities for solitude, and the special features of the WSA. The impacts of uses on adjacent lands could be minimal to major depending on the location, type, and extent of development and access requirements.

Land status patterns would also affect the capability of the BLM to provide outstanding opportunities for primitive recreation. Because of the convoluted public land configuration, visitors would be unable to fully utilize the recreation resources of the Alamo Hueco Mountains.

The impacts to wilderness values under this alternative could be significant.

#### 2. Impacts to Livestock Grazing

Generally, motorized access within the designated wilderness would not be allowed. However, a permit for vehicular access for maintenance purposes to the existing dirt tank within the WSA boundary on the U-Bar allotment (1510) could be authorized if there were no practical alternatives. Permits could also be issued for vehicular access to rangeland developments on private land where the existing access routes cross lands within the WSA, such as the two dirt tanks in T. 33 S., R. 15 W., Section 22, and the developed spring in Section 24. Use of motor vehicles on existing vehicle trails to check livestock would not be permitted. Checking livestock on foot or horseback could result in less effective livestock management due to the inconvenience and time



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requirements and could affect operation costs depending on the use normally made of vehicle trails.

The overall impacts on livestock grazing would not be significant under this alternative.

### B. No Action/No Wilderness (Proposed Action)

Under the No Action/No Wilderness Alternative, the 10,796 acres of public land comprising the Alamo Hueco Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III. The area would be managed under existing land use plans which do not prescribe any special designation or management other than leasing the area for energy minerals with a protective stipulation for wildlife values, transplanting desert bighorn sheep into the area, and management of the habitat for desert bighorn sheep under the Big Hatchets-Alamo Huecos Habitat Management Plan (HMP).

#### 1. Impacts to Wilderness Values

The wilderness values and special features of the Alamo Hueco Mountains WSA would not be provided with long-term Congressional protection. Although the Alamo Hueco Mountains WSA would probably retain its wilderness values in the short-term, management of the area as specified in land use plans would be subject to administrative change in the long-term. Degradation of wilderness values and special features could result from oil and gas exploration or new rangeland developments. Because of this, there could be long-term impacts to existing wilderness values.

The transplant of desert bighorn sheep into the area and management under the HMP would enhance the special wildlife features of the WSA.

#### 2. Impacts to Livestock Grazing

All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. Grazing permittees would be allowed to use vehicles on existing trails to check livestock. There would be no impacts to livestock grazing.



## APPENDIX 23

### BIG HATCHET MOUNTAINS WSA (NM-030-035)

#### I. GENERAL DESCRIPTION

##### A. Location

The Big Hatchet Mountains Wilderness Study Area (WSA) is located in southeastern Hidalgo County in the "bootheel" part of the State of New Mexico. The WSA is approximately 50 miles south-southeast of Lordsburg, New Mexico.

The U.S. Geological Survey (USGS) topographic map covering the WSA is the Big Hatchet Peak, New Mexico quadrangle. This map is at the 15-minute scale.

##### B. Climate and Topography

The Big Hatchet Mountains WSA is characterized by a semiarid continental climate, with mild winters and pleasant to hot summers. Significant differences in climatic conditions are associated with changes in elevation and exposure.

Average annual precipitation in the area is 10 to 12 inches, with locally larger amounts at higher elevations. A wide variation in annual precipitation is characteristic of southern desert climates. Approximately half the annual precipitation occurs in July, August, and September as rain accompanying thundershowers. The showers are generally brief but may be intense and result in flash floods in the arroyos. Snowfall generally averages about 5 inches a year.

During the summer months, daytime temperatures quite often exceed 100°F at elevations below 5,000 feet. Average monthly maximum temperature during July, the warmest month, is in the upper 90's. In January, the coldest month, average monthly minimum temperature is in the middle 20's. Elevation is a significant factor in determining the temperature of any specific locality. Generally, for each 1,000-foot increase in elevation, there is a little more than a 3° decrease in temperature.

Winds generally predominate from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

This WSA consists of the Big Hatchet Mountains, portions of the Hachita Valley on the northeast, and the Playas Valley on the southwest. The Big Hatchet Mountains are a northwest-southeast trending mountain range characterized by very rugged and steep terrain. Elevations vary from about 4,400 feet up to 8,366 feet at Big Hatchet Peak. Major canyons within the Big Hatchet Mountains include Thompson Canyon and Sheridan Canyon.



## BIG HATCHET MOUNTAINS

### C. Land Status

The WSA contains a total of 58,014 acres of public land. Total inholdings within the WSA consist of 1,920 acres of State land and 46 acres of private land (patented mining claims). (See Map 23-1 for land status within the WSA boundary.)

The Big Hatchet Mountains WSA complex is divided into three roadless areas by the location of roads and State land. The largest of these areas, encompassing Big Hatchet Peak, contains 41,390 acres of public land. Inholdings include 1,280 acres of State land and the 46 acres of private land.

The second area is east of the Sheridan Canyon road and includes 14,480 acres in the southeast part of the Big Hatchet range. There are 640 acres of State land inholdings in this area.

The third area is located in the south-central part of the mountain range. It is separated from the other two areas by the Sheridan Canyon road and State land. This area contains 2,144 acres of public land. There are no non-Federal inholdings. This area was originally identified as a 5,240-acre WSA in the New Mexico Wilderness Study Area Decisions (BLM 1980). The area was reduced to 2,144 acres as a result of the Secretary's Policy Announcement of December 28, 1982, which deleted split estate lands (Federal surface/non-Federal subsurface) from wilderness consideration. The New Mexico State Director received permission from the Director to study this 2,144-acre area for wilderness under the authority of Section 202 of the Federal Land Policy and Management Act of 1976.

### D. Access

There is no legal access to the Big Hatchet Mountains WSA. The best physical access is by way of the ranch road branching east-southeast off of State Highway 81 at Hatchet Gap, approximately 15 miles southwest of Hachita. This road leads into a system of ranch roads forming the north and east boundaries.



# BIG HATCHET MTNS. WSA (NM-030-035)

MAP 23-1

## LAND STATUS

— WSA Boundary

■ BLM

□ Private

□ State

--- Amended Boundary (Proposed Action)

Scale: 1/2 inch=1 mile

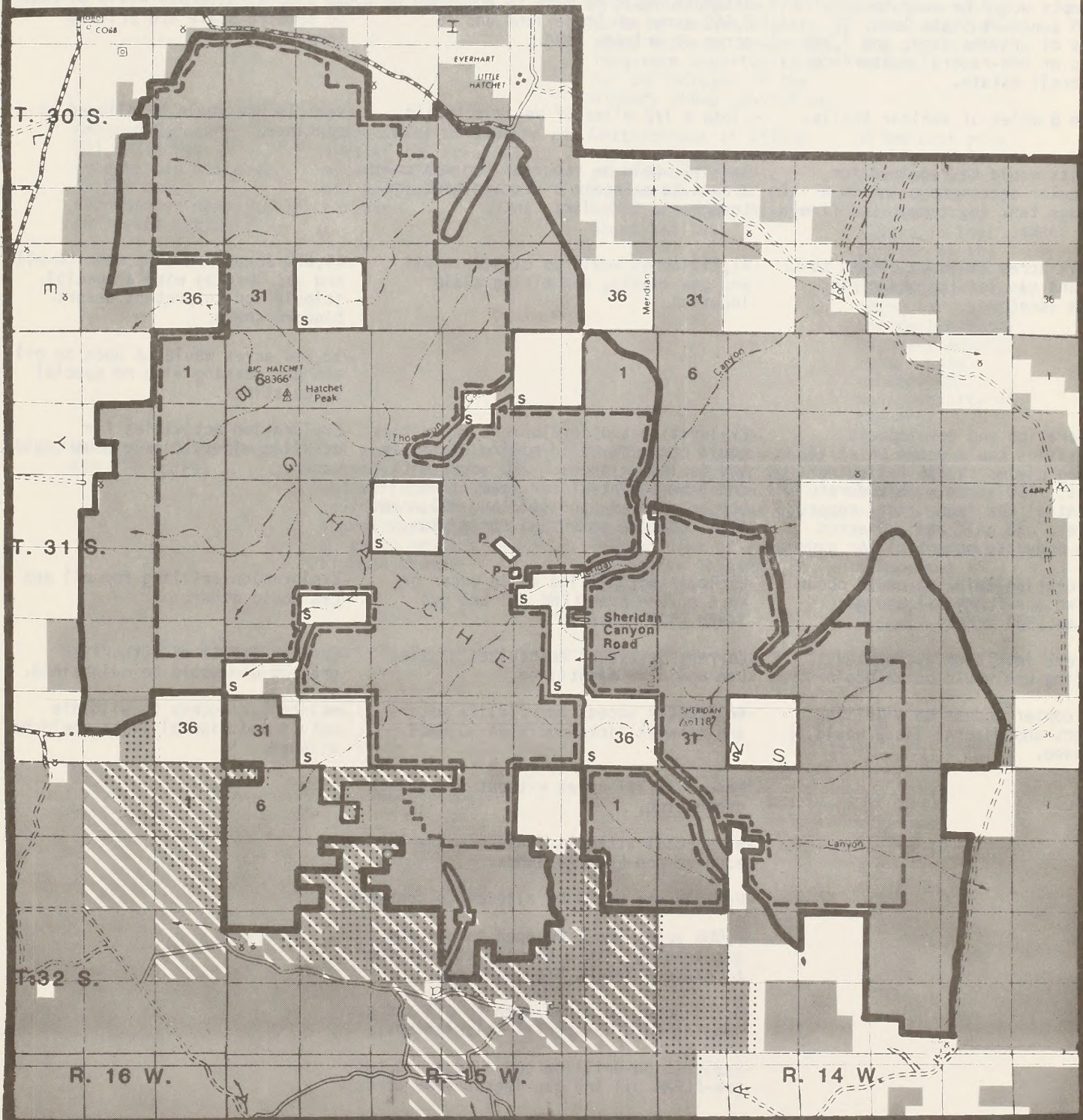
Source: USDI BLM, Las Cruces District, January 1985



BLM Surface/Non  
BLM Subsurface



Lands removed from WSA  
status after reinventory





## BIG HATCHET MOUNTAINS

### E. Proposed Action, Alternatives, and Issues

#### DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	Amended Boundary (Proposed Action)	No Action/No Wilderness
<p>°Manage 58,014 acres as wilderness.</p> <p>-Attempts would be made to acquire 6,840 acres of State land, 86 acres of private land, and 2,840 acres of non-Federal subsurface (mineral) estate.</p> <p>-Close 8 miles of vehicle trails.</p> <p>-Permits would be required for vehicular access to maintain a storage tank and trough and five dirt tanks.</p> <p>-58,014 acres would be closed to oil and gas leasing and mining claim location.</p> <p>-Exploration and development activities could occur on valid mining claims in the following areas: 180 acres with moderate potential for lead, zinc, copper, silver, and gold and 200 acres with moderate potential for gypsum.</p> <p>-Exploration drilling could occur on two pre-FLPMA oil and gas leases (800 acres).</p> <p>-Current levels of authorized grazing use would be maintained.</p> <p>-Helicopter access to wildlife waters and mineral licks would be allowed.</p>	<p>°Manage 41,293 acres as wilderness.</p> <p>-Attempts would be made to acquire 6,560 acres of State land and 46 acres of private land.</p> <p>-Close 6 1/2 miles of vehicle trails.</p> <p>-Permits would be required for vehicular access to maintain a storage tank and trough and five dirt tanks.</p> <p>-41,293 acres would be closed to oil and gas leasing and mining claim location.</p> <p>-Exploration and development activities could occur on valid mining claims in the following areas: 180 acres with moderate potential for lead, zinc, copper, silver, and gold and 200 acres with moderate potential for gypsum.</p> <p>-Exploration drilling could occur on part of one pre-FLPMA oil and gas lease (140 acres).</p> <p>-Current levels of authorized grazing use would be maintained.</p> <p>-Helicopter access to wildlife waters and mineral licks would be allowed.</p> <p>°Manage 16,721 acres without wilderness protection.</p> <p>-No special attempts would be made to acquire non-Federal lands.</p> <p>-Vehicle use would be allowed to continue.</p> <p>-7,000 acres would be open to oil and gas leasing with a special stipulation to protect desert bighorn sheep.</p> <p>-9,721 acres would be open to oil and gas leasing with no special stipulations.</p> <p>-Exploration drilling could occur on two pre-FLPMA oil and gas leases (660 acres).</p> <p>-Current levels of authorized grazing use would be maintained.</p>	<p>°Manage 58,014 acres without wilderness protection.</p> <p>-No special attempts would be made to acquire State and private lands.</p> <p>-Vehicle use would be allowed to continue.</p> <p>-44,670 acres would be open to oil and gas leasing with a special stipulation to protect desert bighorn sheep.</p> <p>-13,344 acres would be open to oil and gas leasing with no special stipulations.</p> <p>-Exploration activities for metallic minerals or gypsum could occur.</p> <p>-Exploration drilling for oil and gas could occur.</p> <p>-Current levels of authorized grazing use would be maintained.</p> <p>-Helicopter access to wildlife waters and mineral licks would be allowed.</p>



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues		
	Oil and Gas Exploration and Development	Desert Bighorn Sheep	Wilderness Values
All Wilderness (58,014 acres)	Opportunity to explore 6,700 acres with moderate potential for oil and gas would be forgone.	Restrictions of wilderness management would provide legislative protection for 44,670 acres of desert bighorn sheep habitat, enhancing long-term opportunities for an increase in the bighorn sheep population.	Wilderness protection would maintain the area's existing wilderness values and supplemental values.
Amended Boundary (41,293 acres recommended suitable, 16,721 acres recommended nonsuitable) (Proposed Action)	Opportunity to explore an area of 100 acres with moderate potential for oil and gas would be forgone.	Restrictions of wilderness management would provide legislative protection for 37,993 acres of desert bighorn sheep habitat.	Wilderness protection would maintain wilderness and supplemental values in that portion of the WSA with the highest quality characteristics for designation. Boundary adjustments would enhance the manageability of the area.
No Action/No Wilderness (58,014 acres)	Oil and gas exploration methods, season of use, and surface occupancy could be restricted on approximately 44,670 acres to protect desert bighorn sheep.	The desert bighorn sheep and their habitat would be protected from the impacts of oil and gas activities by the restrictions of the protective leasing stipulation	Oil and gas geophysical activities and exploration drilling could degrade natural values and solitude in areas of moderate potential



## BIG HATCHET MOUNTAINS

### II. EXISTING RESOURCES

#### A. Geology

The Big Hatchet Mountains WSA is located within the Pedregosa Basin, a late Permian sedimentary basin compared by some geologists (Greenwood 1977; Wengard 1970) to the hydrocarbon-rich Permian Basin of southeast New Mexico and West Texas. A major difference between the two areas, however, is the location of the Pedregosa Basin within the Basin and Range physiographic province, an area that underwent extensive faulting during Tertiary-Recent time. Additionally, many areas within the Pedregosa Basin were subjected to Cenozoic volcanic activity, particularly to the south and west of the Big Hatchet Mountains.

In early Paleozoic times, the area now known as the Big Hatchet Mountains was inundated by seas advancing from the southwest. Marine sediments were deposited throughout the Paleozoic era with only minor interruptions. The early and middle Mesozoic era was characterized by nondeposition or erosion, indicating possible regional uplifting. Shallow seas advanced from the south in the early Cretaceous period and another series of marine sediments were deposited in the area, followed by the accumulation of terrestrial sediments. The total thickness of the stratigraphic section in the Big Hatchet Mountains is 20,000 feet, three-quarters of which are marine in origin (Zeller 1965).

Late Cretaceous (Laramide) thrust-faulting and folding in the Big Hatchet Mountains area was followed by high-angle normal faulting and finally by Basin and Range type normal faulting. The Big Hatchet Mountains were uplifted along normal faults and tilted eastward (Zeller 1975). Erosion of this uplifted fault block has produced the present day topography.

#### B. Water

The Big Hatchet Mountains WSA is situated within the Playas Basin, a noncontributing, closed basin. Drainage is towards the Playas Valley to the southwest and the Hachita Valley to the northeast.

Several ephemeral streams drain the western side of the WSA and generally follow a shallow, indistinct course northward to Hatchet Gap through which water flows during times of exceptionally heavy precipitation. Principal ephemeral streams to the northeast include Thompson and Sheridan Canyons. Both streams empty into the Hachita Valley which has a slight gradient to the southeast towards the Mexican boundary. Surface flows generally occur as a result of summer thundershowers.

Ground water in the WSA is derived from the alluvial deposits of the valley fill. The limestone, shale, and sandstone of marine origin in the Big Hatchet Mountains are relatively impermeable and are not aquifers. Ground water underlying the Hachita Valley moves southeastward into Mexico. In the central valley, water is normally around 100 feet below the surface. In the upland area, the depth to water exceeds 500 feet. Ground water underlying the Playas Valley moves northward towards Hatchet Gap, and depth



to water is generally less than 200 feet. The water table of the Playas Valley is considerably above that of the Hachita Valley near the gap, and it is likely that some water moves through the gap when the water table is high. The ground water reservoir is recharged mainly by infiltration in stream channels during flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

Soils of the Big Hatchet Mountains WSA vary depending on the particular landform on which they occur. Shallow, stony soils on steep slopes are the most common and occur at higher elevations of the Big Hatchet Mountains. These soils are commonly interspersed between areas of exposed limestone bedrock and outcroppings. At lower elevations on footslopes and alluvial fans at the base of the mountains, soils are deeper, have a gravelly surface, and commonly have a layer of calcium carbonate (caliche) under the surface.

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Big Hatchet Mountains WSA consist of six major types:

Vegetation Types	Range Sites	Federal Acres
Pinyon-juniper -		
mixed mountain shrub	Mountains	28,752
Creosote	Gravelly	26,166
Mixed desert shrub	Gravelly sand	316
Tobosa-tarbrush	Clayey	2,420
Tobosa	Draws (swales)	338
Mesquite	Sandy	22

The Big Hatchet Mountains dwarf surrounding mountain ranges and appear as an island in this region. Pinyon-juniper is the dominant vegetation in the higher mountain elevations around Big Hatchet Peak (BLM 1980). On the mountain slopes and surrounding hills, vegetation consists of a mixed mountain shrub aspect including sumac, agave, buckbrush, beargrass, oak, mountain mahogany, spicebush, snakeweed, mariola, ocotillo, yucca, and creosote. Grass species (gramas, tobosa, muhlys, needle and thread, threeawns, and tridens) are also abundant.

Creosote is the dominant vegetation on gravelly areas surrounding the mountain range. Shrub species that characterize this area are snakeweed, mariola, sumac, ocotillo, graythorn, mesquite, and tarbrush. Grass species include bush muhly, threeawns, tobosa, fluffgrass, and tridens.



## BIG HATCHET MOUNTAINS

Mixed desert shrub occurs on gravelly sand areas in the sandy arroyos of canyon bottoms. These are pseudoriparian areas and have been identified as special habitat for wildlife. Shrub and tree species include Wright's silktassel, agave, beargrass, pale wolfberry, Fendlerbush, oak, acacia, juniper, Apacheplume, and mountain mahogany. Grasses include gramas and tridens.

Tobosa grass and tarbush are the dominant vegetation on the deep clayey areas on the west and south sides of the WSA. Creosote invades these areas from the adjacent gravelly sites. Other shrub species include sumac, graythorn, and fourwing saltbush. Associated grasses are burro grass and bush muhly.

Tobosa draw (swale) areas occur on the south side of the WSA. Tobosa occurs in small dense patches with alkali sacaton, burro grass, and vine-mesquite. Invading shrub species are mesquite, snakeweed, tarbush, and creosote.

Mesquite prevails on a small sandy area in the southern part of the WSA. Other associated shrub species are fourwing saltbush and snakeweed.

### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Aletes filifolius

Status: Selected by the New Mexico State Heritage Program as a State sensitive species.

Habitat: On rocky canyon slopes; commonly associated with pinyon and juniper.

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Coryphantha orcuttii macraxina

Status: Selected by the New Mexico State Heritage Program as a special concern element.

Habitat: Occurs above 7,000 feet.

Species: Coryphantha scheeri - Scheer pincushion cactus

Status: There are three varieties; two are Federal candidate species.

Habitat: Open plains and flats; often in alluvial soils, 3,000-5,000 feet.



Species: Ferocactus wislizenii - southwestern barrel cactus  
Status: Selected by New Mexico State Heritage Program as a special concern element.  
Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

Species: Penstemon dasyphyllus - thickleaf beardtongue  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Occurs on gravelly slopes and desert grasslands.

Species: Perityle lemmonii - rock daisy  
Status: Selected by the New Mexico State Heritage Program as a State sensitive species.  
Habitat: Grows in crevices of boulders on limestone cliffs from 5,300-5,600 feet.

## E. Wildlife

### 1. General

Most of the Big Hatchet Mountains WSA is a mixed shrub mountain habitat site with some significant pockets of pinyon-juniper grass mountain and pseudoriparian sites. Creosote sites occur at the lower elevations.

Cliffs are abundant and important in the range because they provide habitat for nesting raptors and a host of smaller wildlife. Limestone formations such as those in the Big Hatchet Mountains have many caves which are shelter to a variety of wildlife ranging from mountain lions to various species of bats.

Because most of the country around the Big Hatchet Mountains is a lower-elevation, desert shrub landscape, the range has the effect of being an island. Not only do the mountains support a completely different fauna than the surrounding desert, but they are a stopover point for wide-ranging wildlife such as mountain lions (which find a good source of food and cover) and migrating birds.

The resident wildlife population is varied because of the changes in elevation, habitats, and soils within the WSA. An assortment of birds ranging from the mountain-dwelling scrub jay to the desert-dwelling black-throated sparrow could be expected within the WSA.

The New Mexico Department of Game and Fish (NMDGF) has specified the Big Hatchet Mountains as a mule deer herd unit. They expect the optimal population size to be five deer per square mile; presently there are less than this. There is also a javelina population in the WSA. Donaldson (1965) estimated their numbers at 43 animals in 1962.



## BIG HATCHET MOUNTAINS

### 2. Threatened or Endangered Fauna Species

Desert bighorn sheep are the most significant wildlife feature of the WSA. They are a State-listed endangered species. Bighorn sheep were once abundant in the Big Hatchet Mountains. In the early 1950's, as many as 125 to 150 bighorn sheep lived in the Big Hatchet Mountains, using nearly all of the range. Several years of severe drought in the late 1950's and the resultant competition with deer and domestic livestock decimated the herd. By the early 1960's, less than 25 bighorn sheep remained. Their numbers have stayed low since; this can probably be attributed to predation.

The NMDGF and BLM have committed themselves to the survival of this herd. In 1979, the NMDGF built a paddock in Romney Canyon, 1½ miles west of Big Hatchet Peak and put 11 bighorn sheep from the Redrock Game Farm into this paddock. Historically, this was a bighorn sheep use area. The idea behind this move was not only to supplement the existing herd, but to induce the bighorn sheep to remain in an unused portion of the range. The native herd stays in the southern part of the range and frequently crosses several miles of desert to reach a mineral lick in the Cairn Hills. This desert crossing appeared to make the bighorn sheep vulnerable to predation. It is hoped that the introduced bighorn sheep will stay in the paddock area and not travel to the Cairn Hills. Thus far, the experiment appears successful. The introduced bighorn sheep have moved south toward the indigenous bighorn sheep, probably for breeding, but return to the Hatchet Peak area afterwards. As of August 1981, the introduced herd had increased to 19 animals.

Historically, the gray wolf, a Federal-listed species, was found in all of the "bootheel" country of New Mexico, including the WSA. However, there are no recent documented sightings in the Big Hatchet Mountains. The species barely survives, even in Mexico.

A State-listed species, the Sonora mountain kingsnake, was collected in the Big Hatchet Mountains. This species is tied to moist conditions such as those found in canyons.

### F. Visual

The Big Hatchet Mountains have a Class A (high) scenic quality rating. The landform of the Big Hatchet Mountains is characterized by massive, irregularly folded and striated mountains. Colors are pale pinks on peaks or other high elevations where bare stone shows through. In the lower elevations, colors are reddish brown or gray. Texture is grainy with some striations. Vegetation is alternately banded with rock at high elevations and more diffuse toward the bottom. Vegetation colors are the dark green of evergreen trees and shrubs, with yellow-tan grasses at lower elevations.

Portions of the Big Hatchet Mountains WSA are in three Visual Resource Management (VRM) classes as follows: Class II--45,214 acres, Class III--2,560 acres, Class IV--10,240 acres.



G. Cultural

There are several small prehistoric sites that have been reported in this area; however, they have not been recorded or evaluated as to their significance. Although there have been no systematic surveys to locate cultural resources, based on topography and water sources, the Big Hatchet Mountains WSA has a low potential for cultural resources.

H. Air

Generally, the quality of air within the Big Hatchet Mountains WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Emissions from the Phelps-Dodge Copper Smelter, located approximately 3 miles west of the WSA boundary in the Playas Valley, could slightly lower the air quality of the area if weather conditions are such that lower quality air is trapped by an inversion layer which eventually drifts over the WSA. The only other major degradation of air quality occurs during the spring months (March-May), when west-prevailing winds (commonly gusting in excess of 30 mph) result in dust storms throughout the southern part of the State.



Big Hatchet Mountains WSA.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

The mineral resources potential of the Big Hatchet Mountains WSA is shown on Map 23-2. Map 23-3 shows the approximate locations of mining claims and mineral leases within the WSA.

##### 1. Energy Minerals (Oil and Gas)

As of December 1, 1984, there were 14 oil and gas leases within the WSA boundary. Two of the leases were issued prior to the enactment of the Federal Land Policy and Management Act (FLPMA) on October 21, 1976, while the remainder became effective after this date. A protective stipulation is presently attached to all oil and gas leases to protect the desert bighorn sheep and its habitat in the Big Hatchet Mountains (Big Hatchets-Alamo Huecos Oil and Gas Leasing EA, BLM 1980; revised 1982). Approximately 50,000 acres in the main part of the Big Hatchet Mountain range, on and around U-Bar Ridge, and in the Cairn Hills (which are south of the southeast part of the WSA) are within the desert bighorn sheep habitat area. Approximately 44,670 acres of the desert bighorn sheep habitat area covered by the protective stipulation is within the boundaries of the WSA. All exploration drilling, development, and production activities on leases within the desert bighorn sheep habitat area are subject to the protective stipulation. In addition, all exploration activities in the Big Hatchet Mountains are closely monitored by both the BLM and the New Mexico Department of Game and Fish (NMDGF) to protect the sheep.

There are no known occurrences of energy minerals within the Big Hatchet Mountains WSA; however, some positive indicators for the discovery of hydrocarbons in the Big Hatchet Mountains are present. These include (1) a thick sequence (15,000 feet) of Paleozoic and Cretaceous marine sediments containing numerous potential source beds and reservoir rocks, (2) favorable structural and stratigraphic traps within the Pedregosa Basin, and (3) shows of gas in the Humble "BA" well, approximately 2 miles southwest of the WSA boundary (T. 32 S., R. 16 W., Section 25) and oil and gas in the Hachita Dome well, approximately 1½ miles northeast of the WSA (T. 30 S., R. 15 W., Section 12). The Humble State "BA" well had flows of 500,000 cubic feet of gas per day prior to damage sustained during an attempt to enhance recovery by fracturing the reservoir rock and injecting it with acid (Greenwood 1970). Numerous petroleum and geophysical companies, including Placid Oil, Atlantic Richfield Company, May Petroleum, Gulf Oil, Exxon, Dawson Geophysical Services Inc., Grant Geophysical, Geosource Inc., Pac-West Geophysical, Arma Geophysical, Daniel Geophysical, and Tidelands Geophysical have all shown interest in the Big Hatchet Mountains.

Although the potential for the discovery of hydrocarbon resources, particularly dry gas (Thompson et al. 1978), is moderate to high within the bolson portions of the Pedregosa Basin, only the pediment portions of the WSA have moderate potential. This includes areas along the



northeast pediment of the mountains closest to the Hachita Dome test well, and in the southwest part of the WSA near the U-Bar syncline. The remainder of the WSA has low potential for oil and gas because of the extensive faulting and exposure of potential reservoir rocks.

## 2. Nonenergy Minerals

Three unpatented mining claims, all of which were located prior to the enactment of FLPMA, are present within the WSA.

### a. Base and Precious Metals (Lead, Zinc, Copper, Silver, Gold)

Several small deposits of metallic mineral resources, including lead, zinc, copper, and silver, occur in the Big Hatchet Mountains WSA. The old Lead Queen mine (T. 31 S., R. 15 W., Section 35) was operated during the 1930's and possibly into the 1940's. Total production is unknown. Lead, zinc, and silver occur at the Sheridan mine (T. 31 S., R. 15 W., Section 22), a patented property in Sheridan Canyon that was last worked in the 1930's. One carload of zinc was shipped from this mine in 1917. A small copper prospect on a ridge near Big Hatchet Peak (T. 31 S., R. 15 W., Section 5) was said to have been worked in the early 1900's, when ore was brought out by burros, but the amount of mineralization here is insignificant. The ore typically occurs in fault zones within Paleozoic sediments as small veins and stringers in all of these areas.

Rosario Exploration Company drilled on a magnetic anomaly along the eastern side of the Big Hatchet Mountains (T. 31 S., R. 14 W., Section 21) in May 1981. The hole penetrated a mafic intrusion, but no mineralization was noted. The possibility of metallic or other mineralization in this area cannot be eliminated, but is considered to be low based upon currently available information. The overall potential for metallic resources is moderate in the vicinity of the Lead Queen and Sheridan mines and low throughout the rest of the WSA.

### b. Fluorspar

Information submitted by the Phelps-Dodge Corporation during the public comment period on the New Mexico Wilderness Supplemental Draft Environmental Assessment (BLM 1983) indicates potential for fluorspar mineralization in the Big Hatchet Mountains. There have been no other indications of fluorspar deposits in the WSA. Extensive fluorspar deposits elsewhere in the United States and world are adequately supplying present fluorspar needs, however, and this is expected to continue for some time to come. Also, fluorspar produced in the west is becoming less and less attractive because of high transportation costs to market areas in the midwest and along the Gulf coast (Mineral Commodity Summaries 1984). Therefore, the potential for fluorspar resources in the Big Hatchet Mountains WSA is low.

### c. Gypsum

Gypsum of sufficient quality for agricultural use occurs in the Big Hatchet Mountains WSA. An unknown quantity of gypsum was shipped



# BIG HATCHET MTNS. WSA (NM-030-035)

MAP 23-2

— WSA Boundary

□ BLM

□ Private

□ State

--- Amended Boundary (Proposed Action)

Scale: 1/2 inch=1 mile

## MINERAL RESOURCE POTENTIAL

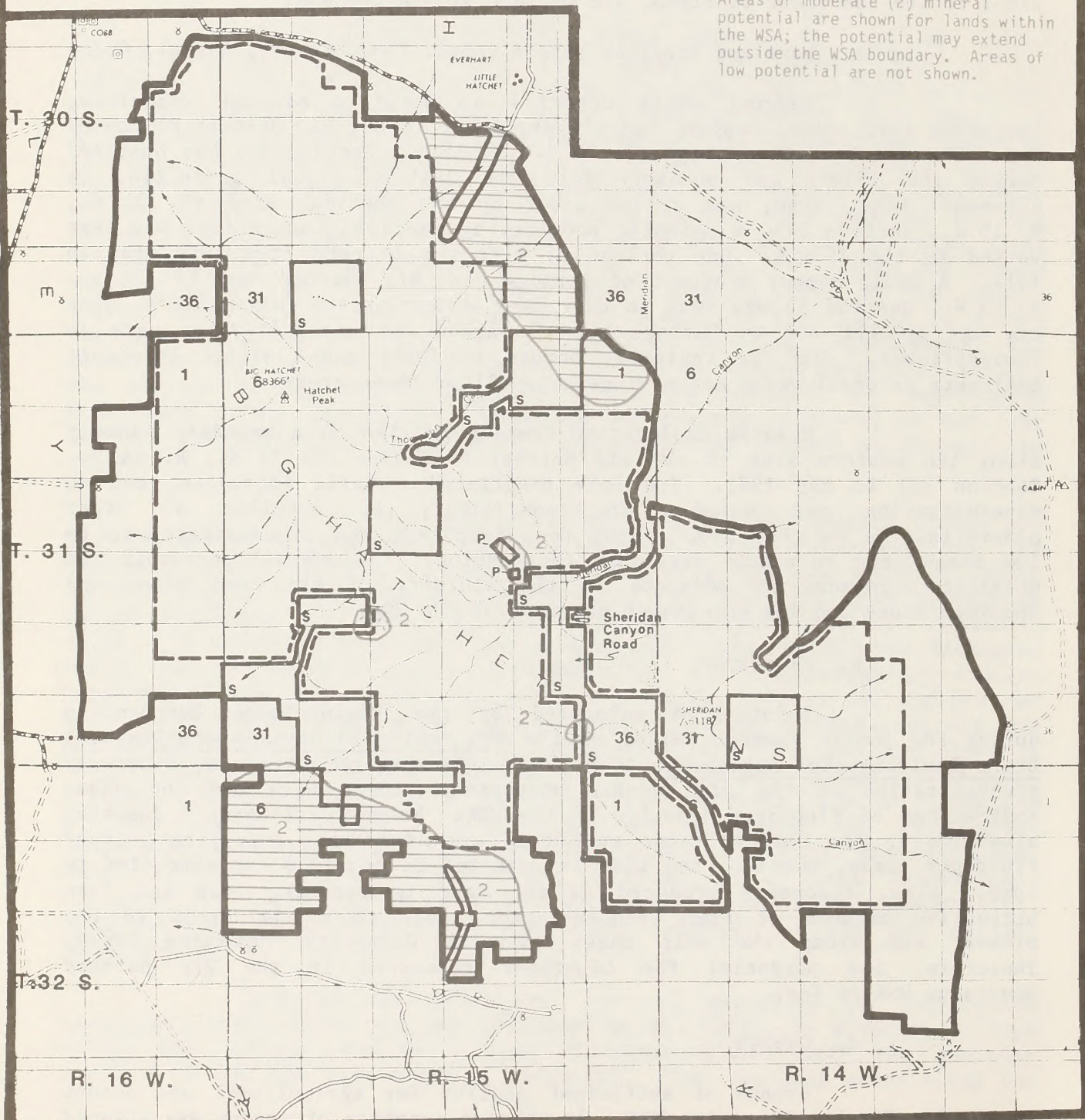
▨ Petroleum, particularly dry gas

▨ Base and Precious Metals

▨ Gypsum

Source: USDI BLM, Las Cruces District, January 1985

\*Areas of moderate (2) mineral potential are shown for lands within the WSA; the potential may extend outside the WSA boundary. Areas of low potential are not shown.





# BIG HATCHET MTNS. WSA (NM-030-035)

MAP 23-3

— WSA Boundary

□ BLM

□ Private

□ State

--- Amended Boundary (Proposed Action)

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District,  
January 1985

## MINING CLAIMS AND MINERAL LEASES

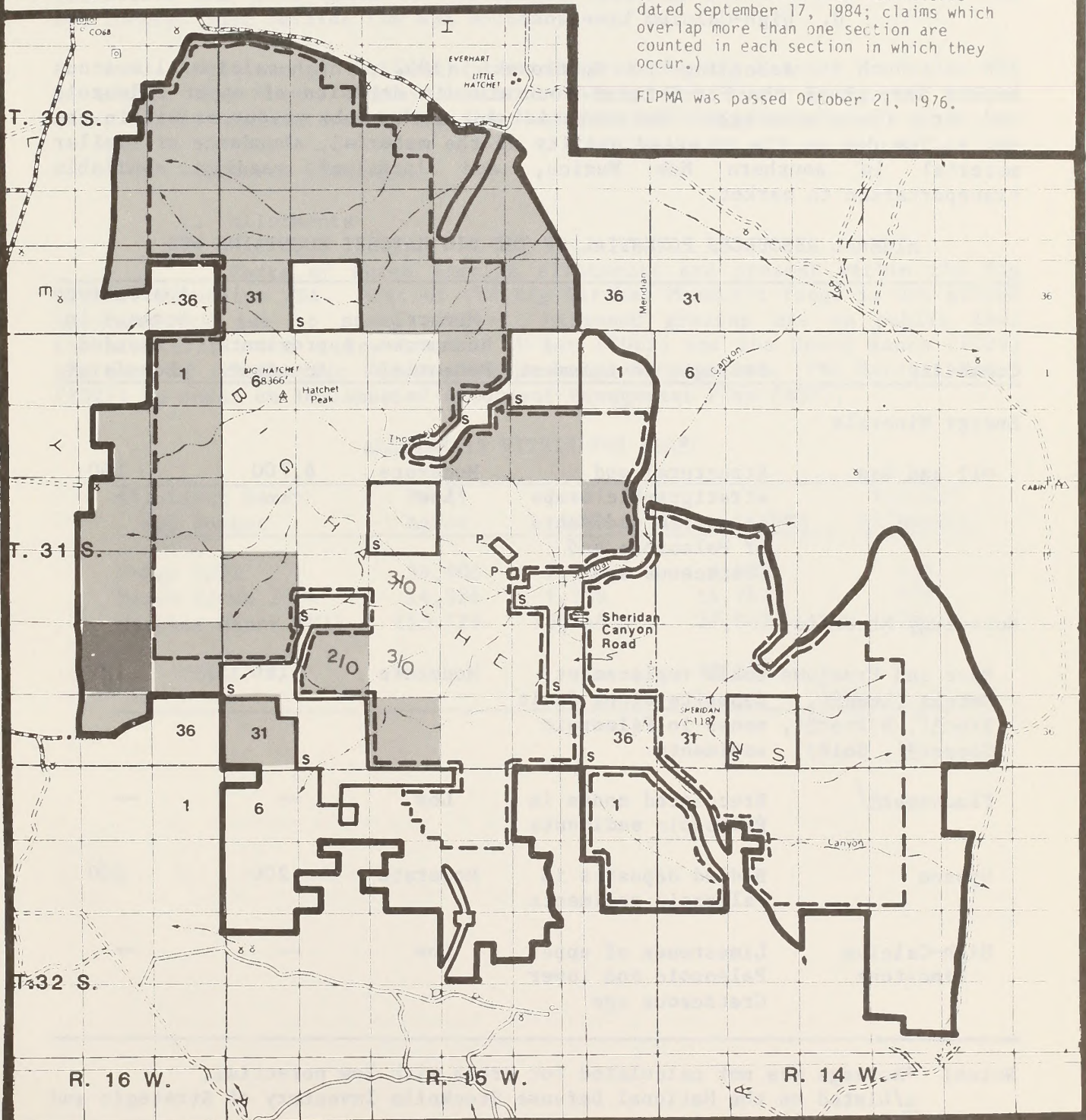
■ Pre-FLPMA Oil & Gas Lease

■ Post-FLPMA Oil & Gas Lease

2/0 Pre-FLPMA Mining Claims per section  
Post-FLPMA Mining Claims per section

(Claim information from BLM records dated September 17, 1984; claims which overlap more than one section are counted in each section in which they occur.)

FLPMA was passed October 21, 1976.





## BIG HATCHET MOUNTAINS

from three unpatented mining claims in T. 31 S., R. 15 W., Sections 21, 28, and 29, during the late 1950's and early 1960's. Southeast of these claims (T. 32 S., R. 15 W., Sections 3 and 10) is another area of potentially marketable gypsum. In both areas, the gypsum occurs as bedded deposits within Paleozoic sediments. The biggest obstacle to production of this material appears to be distance to market and subsequent high transportation costs; because of this factor, the potential for gypsum in these areas is considered to be moderate.

### d. High-Calcium Limestone

According to Kottowski (1962), high-calcium limestone occurs throughout the Big Hatchet Mountains in deposits of upper Paleozoic and early Cretaceous age. The potential for marketable resources within the WSA is low due to the untested quality of the material, abundance of similar material in southern New Mexico, and lack of readily available transportation to market.

### MINERAL RESOURCES POTENTIAL OF THE BIG HATCHET MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*	Approximate Acreage in Amended Boundary*
Energy Minerals				
Oil and Gas	Structural and stratigraphic traps in marine sediments of Paleozoic and Cretaceous age	Moderate Low	6,700 --	100 --
Nonenergy Minerals				
Base and Precious Metals (Lead <sup>a</sup> / <sub>a</sub> , Zinc <sup>a</sup> / <sub>a</sub> , Silver <sup>a</sup> / <sub>a</sub> , Copper <sup>a</sup> / <sub>a</sub> , Gold)	Small replacement deposits along fault zones in Paleozoic sediments	Moderate	180	180
Fluorspar <sup>a</sup> / <sub>a</sub>	Brecciated zones in Paleozoic sediments	Low	--	--
Gypsum	Bedded deposits in Paleozoic sediments	Moderate	200	200
High-Calcium Limestone	Limestones of upper Paleozoic and lower Cretaceous age	Low	--	--

Notes: \*Acreage was not calculated for areas with low potential.

<sup>a</sup>/Listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.



## B. Watershed

Water use within the Big Hatchet Mountains WSA is primarily by livestock and wildlife. There are nine wildlife water developments inside the WSA designed to catch and store relatively small amounts of precipitation (see Chapter III, Wildlife). Also within the WSA, there are five dirt tanks that provide seasonal water use, a storage tank, and a drinking trough (see Chapter III, Livestock Grazing). Several well facilities and dirt tanks for livestock watering and limited domestic use are located just outside the WSA boundary.

A portion of the western boundary of the Big Hatchet Mountains WSA is within the Playas Valley declared underground water basin and ground water use is administered by the New Mexico State Engineer.

## C. Livestock Grazing

### 1. Allotments

Parts of three grazing allotments are present within the Big Hatchet Mountains WSA. Most of the Big Hatchet Mountain range is not grazed by livestock due to steep slopes. Licensed grazing use on public land includes cattle and a few horses. U-Bar (2022) and the Heard Ranch (2024) are part of the Pacific Western/Phelps-Dodge Corporation. The Hatchet Ranch (2027) is under an implemented Allotment Management Plan (AMP).

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
U-Bar 2022	39,006	7,608	5,690	15%
Heard Ranch 2024	14,826	1,356	14,382	97%
Hatchet Ranch 2027	115,729	13,944	37,942	33%
TOTAL			58,014	



## BIG HATCHET MOUNTAINS

### 2. Ranch Management

#### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
U-Bar 2022	interior fence	$\frac{1}{2}$ mile
Heard Ranch 2024	storage tank and trough interior fence	T. 31 S., R. 15 W., Sec. 29 2 miles
Hatchet Ranch 2027	dirt tank dirt tank dirt tank dirt tank interior fence	T. 31 S., R. 15 W., Sec. 12 T. 31 S., R. 15 W., Sec. 10 T. 31 S., R. 14 W., Sec. 31 T. 31 S., R. 15 W., Sec. 35 6 $\frac{1}{2}$ miles

Boundary Fences: Heard Ranch 2024 and U-Bar 2022 2 miles  
Hatchet Ranch 2027 and U-Bar 2022 3 miles

Note: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

### D. Recreation

The Big Hatchet Mountains are a State game refuge and are closed to hunting. Opportunities for recreation in the WSA are for primitive, dispersed activities and are described in Chapter IV, Primitive and Unconfined Recreation.

### E. Education/Research

The main research in this area involves the desert bighorn sheep population (see Chapter II, Wildlife). There is potential for paleoenvironmental studies in dry caves.

### F. Realty Actions

A communication site, consisting of one small antenna and battery pack, is located on top of Big Hatchet Peak. At present, there is no record of a right-of-way being granted for this installation, and the site is unauthorized. Maintenance frequency and responsibility have not been determined.

### G. Wildlife

There are a number of wildlife waters which were constructed for desert bighorn sheep. Nine umbrella or metal apron units are within the Big



Hatchet Mountains WSA. Another umbrella unit is on a State section adjacent to the WSA, but influences the bighorn sheep in the WSA since it is a source of water in a major use area.

Mineral supplement stations have been placed in the Big Hatchet Mountains. Use of these stations by the indigenous bighorn sheep has cut down on movement of the bighorn sheep to the Cairn Hills (Bavin 1982).

A Habitat Management Plan (NMDGF and BLM 1982) has been written for the Big Hatchets-Alamo Huecos complex. Planned actions include fencing some canyons to keep cattle out during the growing seasons, and prescribed or controlled burns to thin out shrub species and improve desert bighorn sheep habitat. Predators would be controlled until the bighorn sheep herd stabilizes. Mineral licks would be maintained. At the base of the mountains, vegetation manipulation may be used on some creosote areas. More new waters may be developed or old nonfunctional ones restored.



## BIG HATCHET MOUNTAINS

### IV. WILDERNESS CRITERIA

#### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

###### a. Naturalness

The apparent naturalness of the Big Hatchet Mountains WSA is affected by a variety of imprints of man: rangeland developments, wildlife waters, vehicle trails and roads, and mining activity.

Rangeland developments within the WSA include dirt tanks and fences. The fences and the majority of the dirt tanks are in the lower elevations. The windmill in Sheridan Canyon is on private land. Nine wildlife waters are dispersed throughout the mountain range. The impacts of these developments are mitigated by the large size of the WSA, the dispersed locations of the developments, and topographic screening. These imprints have an insignificant impact on naturalness.

The road through Sheridan Canyon does not have a significant impact on naturalness. The part of the road in T. 31 S., R. 15 W., Sections 13, 24, and 23, follows a very rocky arroyo and requires a four-wheel drive vehicle. The rest of the road south of Sheridan windmill, although originally constructed and maintained, is not a well improved road.

Mining impacts in the WSA are insignificant. The patented mines in Sheridan Canyon and the Proverbial Gyp mining claims along the west slope of the mountain range are presently inactive. The visual impacts of past activity are only noticeable in the general vicinities of the mines.

The Big Hatchet Mountains WSA appears to have been affected primarily by the forces of nature. The core of the WSA, which consists of the Big Hatchet Mountain range, is especially natural. The imprints of man are substantially unnoticeable because of the large size and rugged topography of the WSA. The naturalness of the Big Hatchet Mountains WSA is of a very high quality.

###### b. Solitude

The Big Hatchet Mountains WSA provides outstanding opportunities for solitude. The large size of the WSA and generally well blocked-up configuration allow visitors to disperse and avoid the sights and sounds of others. The rugged topography of the Big Hatchet Mountains provides numerous secluded canyons and ridges. Many of the canyons, such as Thompson Canyon, also have quite a bit of vegetative screening. High quality outstanding opportunities for solitude are available throughout the WSA.



c. Primitive and Unconfined Recreation

There are outstanding opportunities for primitive and unconfined recreation in the Big Hatchet Mountains WSA. The boundary roads surrounding the WSA require high clearance or four-wheel drive vehicles, so motorized recreation within the WSA is discouraged.



Overview of the Big Hatchet Mountains from Thompson Canyon.

Primitive recreation opportunities within the WSA include hiking, backpacking, horseback riding, mountain climbing, and sightseeing. The rugged terrain and large size of the WSA provide for these outstanding and challenging recreation opportunities. The outstanding solitude and remoteness of the area enhance the primitive aspects of recreational experiences in the WSA. Opportunities for sightseeing are good throughout the WSA. The lucky visitor might catch a glimpse of the desert bighorn sheep.

The Big Hatchet Mountains WSA offers outstanding opportunities for primitive and unconfined recreation in terms of both quality and diversity of available opportunities.



## BIG HATCHET MOUNTAINS

### 2. Special Features

The Big Hatchet Mountains WSA contains special ecological and scenic features. The ecological features include both vegetation and wildlife values of scientific and educational interest. The Big Hatchet Mountains provide habitat for one Bureau sensitive plant species proposed for Federal listing, two State sensitive plant species, and two plant species selected by the New Mexico State Heritage Program as special concern elements (see Chapter II, Vegetation). The Big Hatchet Mountains WSA contains special habitat features such as cliffs for nesting raptors and caves which provide shelter for a variety of wildlife. Two State endangered animal species are found in the area; the desert bighorn sheep and the Sonora mountain kingsnake. The desert bighorn sheep have received a significant amount of study by the New Mexico Department of Game and Fish (see Chapter II, Wildlife).

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Big Hatchet Mountains WSA as being in the Mexican Highlands Shrubsteppe Province with a potential natural vegetation of oak-juniper woodland.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Types</u>	<u>Acres</u>
mountain mahogany oak scrub	28,752
creosote	26,166
Trans-Pecos shrub savanna	316
grama tobosa shrubsteppe	2,758
mesquite-acacia savanna	22

#### b. Distance From Population Centers

The Big Hatchet Mountains WSA is approximately 4 hours driving time from El Paso, Texas; 3 hours from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.



B. Manageability

Several characteristics of the Big Hatchet Mountains WSA affect the ability of the BLM to manage the area to preserve present wilderness values: pre-Federal Land Policy and Management Act (FLPMA) unpatented mining claims, patented mines, nonpublic lands, pre-FLPMA oil and gas leases, the Sheridan Canyon road, and cherry-stemmed roads.

There are three pre-FLPMA unpatented mining claims in the Big Hatchet Mountains WSA. The presence of these claims affects the manageability of the WSA in two ways:

1. The FLPMA specifies that mining uses that existed on the date of approval of the Act may continue in the same manner and degree during the time that an area is under wilderness review. Such mining uses are grandfathered and may continue even if the uses would impair wilderness suitability.

In addition, mining claimants may be recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976, and the claimant can show BLM that the claim continues to be supported by such a discovery. Valid existing rights convey a more liberal development standard than grandfathered rights in that activities on valid claims are not limited to the same manner and degree. When it is determined that the valid existing rights can be exercised only through activities that will impair wilderness suitability, the activities will be regulated only to prevent unnecessary and undue degradation. If the pre-FLPMA claims in the Big Hatchet Mountains WSA meet the above criteria, wilderness values in the vicinity of the mining activities could be degraded before the area is designated wilderness.

2. Once an area is designated wilderness, the provisions of the Wilderness Act of 1964 and the Wilderness Management Policy (WMP) (BLM 1981) apply. Under the Wilderness Act and the WMP, holders of mining claims validly established in an area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the valid existing rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, wilderness values could be degraded after the area is designated wilderness.

At the present time, development on these claims appears unlikely due to the distance to market. The presence of the claims does not pose a major obstacle to wilderness management of the area at the present time.



## BIG HATCHET MOUNTAINS

Private land inholdings affecting the manageability of the WSA consist of two patented mining claims. At the present time, the mines are inactive. Granting vehicular access to these patented lands, should it be necessary in the future, would not pose major manageability problems since the parcels are less than 1 mile from the Sheridan Canyon road and the access would cross less than a  $\frac{1}{4}$  mile of the WSA. At the present time, the private inholdings do not pose a significant manageability problem.

State land inholdings and cherry-stemmed State land also limit the degree of BLM control over the WSA. All of the State land is leased for oil and gas, and rangeland developments are located on some of the State land. Nonwilderness uses on the State land or the development of access could negatively impact basic wilderness values (roadlessness, size, naturalness, solitude, and primitive recreation). Such development could also impact the area's most significant supplemental value, the desert bighorn sheep. However, extensive development on the 1,920 acres of State land inholdings is improbable because most of the parcels are situated within the mountain range proper, where the terrain is rugged and steep and oil and gas potential is low. It is also unlikely that the State of New Mexico would allow development that would endanger the desert bighorn sheep.

Should all or a portion of the Big Hatchet Mountains WSA be designated wilderness, certain State and private inholdings and non-Federal lands adjacent to the designated area should be acquired. The topographic integrity of the designated area would be enhanced and the potential for impacts on wilderness values as a result of incompatible uses on these lands would be eliminated. The acquisitions would enhance the manageability of the designated wilderness. Lands recommended for acquisition under the All Wilderness and Amended Boundary Alternatives are legally described below.

<u>Lands to be Acquired Under the Amended Boundary Alternative</u>				<u>Acres</u>
<u>State Land</u>				
T. 30 S., R. 15 W.,	Section 32:	All		640
T. 30 S., R. 16 W.,	Section 36:	All		640
T. 31 S., R. 14 W.,	Section 32:	All		640
T. 31 S., R. 15 W.,	Section 2:	All		640
	Section 3:	SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$		80
	Section 10:	NW $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ NW $\frac{1}{4}$		80
	Section 13:	E $\frac{1}{2}$ SE $\frac{1}{4}$		80
	Section 16:	All		640
	Section 20:	S $\frac{1}{2}$		320
	Section 23:	S $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ S $\frac{1}{2}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$		320
	Section 26:	E $\frac{1}{2}$		320
	Section 32:	All		640
	Section 36:	All		640
T. 32 S., R. 14 W.,	Section 5:	SW $\frac{1}{4}$ SW $\frac{1}{4}$		40
	Section 8:	NE $\frac{1}{4}$ NW $\frac{1}{4}$ , W $\frac{1}{2}$ W $\frac{1}{2}$		200
T. 32 S., R. 15 W.,	Section 2:	All		640
TOTAL				6,560



Private Land

The patented mining claims in:

T. 31 S., R. 15 W., Section 15: SE $\frac{1}{4}$   
 Section 22: NE $\frac{1}{4}$   
 Section 23: SW $\frac{1}{4}$ NW $\frac{1}{4}$

TOTAL 46

GRAND TOTAL 6,606

If the entire WSA is designated wilderness, the approximately 3,160 acres described below should be acquired in addition to the 6,606 acres recommended for acquisition under the Amended Boundary Alternative.

Additional Lands to be Acquired Under the All Wilderness Alternative Acres

Private Land

T. 32 S., R. 15 W., Section 11: NW $\frac{1}{4}$ NE $\frac{1}{4}$  40

State Land

T. 31 S., R. 15 W., Section 30: SW $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$  240  
 Section 31: NE $\frac{1}{4}$ NE $\frac{1}{4}$  40

TOTAL 280

Non-Federal Subsurface (Mineral) Estate

T. 32 S., R. 15 W., Section 3: NW $\frac{1}{4}$ NW $\frac{1}{4}$  40  
 Section 4: N $\frac{1}{2}$ N $\frac{1}{2}$  160  
 Section 5: N $\frac{1}{2}$ NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$  200  
 Section 6: N $\frac{1}{2}$ NW $\frac{1}{4}$  80  
 Section 8: NE $\frac{1}{4}$ , NE $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$  480  
 Section 9: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$  120  
 Section 11: NE $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ NW $\frac{1}{4}$  80  
 Section 12: SW $\frac{1}{4}$ NW $\frac{1}{4}$ , W $\frac{1}{2}$ SW $\frac{1}{4}$  120  
 Section 13: NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$  240  
 Section 14: S $\frac{1}{2}$ NE $\frac{1}{4}$  80  
 Section 15: NE $\frac{1}{4}$ NW $\frac{1}{4}$  40  
 Section 16: N $\frac{1}{2}$ N $\frac{1}{2}$  160  
 Section 17: N $\frac{1}{2}$ NW $\frac{1}{4}$  80  
 T. 32 S., R. 16 W., Section 1: All 640  
 Section 12: E $\frac{1}{2}$  320

TOTAL 2,840

GRAND TOTAL 3,160



## BIG HATCHET MOUNTAINS

Parts of two pre-FLPMA oil and gas leases overlap the WSA boundary. One of these leases is approximately 1 mile northwest of U-Bar Ridge in T. 31 S., R. 16 W., Section 26. The second lease is along the north boundary of the WSA in T. 30 S., R. 15 W., Sections 7 and 15. As with mining claims, mineral leases on lands under wilderness review issued prior to the date of enactment of FLPMA are guaranteed certain rights; both while such lands are under interim management and also after such lands are designated wilderness. The two pre-FLPMA leases in the Big Hatchet Mountains WSA represent valid existing rights. Activities for the use and development of these leases would be required to satisfy the nonimpairment criteria unless this would unreasonably interfere with the rights of the lessee, in which case the impairing activities would be allowed to proceed. Therefore, there is the potential for the degradation of wilderness values in the vicinity of the two pre-FLPMA leases, both before and after the area is designated wilderness. These leases do not, however, represent a major manageability problem. Only approximately 800 acres of the two leases are within the WSA boundary. Since both leases are accessed by existing roads, road construction would not be necessary to explore on these leases. The leases are far enough from the large core of the Big Hatchet Mountains WSA that the impacts of exploration drilling, development, and production would not significantly and cumulatively degrade wilderness values. In addition, the leases will expire in July 1985 and March 1986. If the area has been designated wilderness and there has been no drilling on the leases as of their expiration dates, the leases would not be reissued.

The Sheridan Canyon road does not receive much use at present. If vehicular use of the road should increase, opportunities for solitude in the canyon would diminish. Increased vehicular use could also stress the desert bighorn sheep. The same impacts, to a lesser degree, could occur if vehicular use increases on the five roads cherry-stemmed into the WSA. Should the area be designated wilderness, serious consideration should be given to restricting vehicular access on these roads, especially the Sheridan Canyon road. Vehicular use on the road could be limited to the grazing permittee, the NMDGF, and other users if there were no practical alternatives. Restricting use on these roads could benefit not only wilderness values, but also the very sensitive desert bighorn sheep.

Manageability problems are somewhat significant in the southwest part of the WSA around U-Bar Ridge. The potential for oil and gas is moderate and industry has indicated interest in this area. Split estate lands (Federal surface/private subsurface) form the southwest and southern parts of the WSA boundary. There is also cherry-stemmed State land, cherry-stemmed roads, and a pre-FLPMA oil and gas lease in this part of the WSA. There is potential for nonwilderness uses, such as oil and gas exploration drilling, to occur on non-Federal lands or split estate lands on and around U-Bar Ridge.

The Big Hatchet Mountains WSA could be managed to preserve wilderness values in the long-term.



## V. CONSULTATION AND COORDINATION

## A. Public Involvement Overview

Personal letters, form letters, and petitions were received on the Big Hatchet Mountains WSA during the public comment periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). The Big Hatchet Mountains WSA proposal was among the ten most commented on recommendations in the State. Photographs, road affidavits, maps, and a list of mining claims were included with the comments.

Approximately 58 percent of the personal letters supported wilderness review of the Big Hatchet Mountains. The supporting comments concentrated on outstanding opportunities for solitude and primitive recreation and the supplemental geological, scenic, and wildlife values of the area.

Approximately 42 percent of the personal letters opposed wilderness review of the area. Opposing comments stated that the area should be dropped from further consideration for the following reasons: oil and gas potential, hardrock minerals, nonpublic land inholdings, dull topography, undesirable vegetation, low potential for rehabilitation, and lack of basic wilderness criteria. One comment noted that due to the wildlife management problems of the desert bighorn sheep, they could hardly be considered a supplemental value.

During the public comment period on the New Mexico Wilderness Supplemental Draft Environmental Assessment (BLM 1983), 33 personal inputs, 13 form letters, 1 petition with 15 signatures, and 52 coupons were received indicating support for wilderness designation of the Big Hatchet Mountains WSA. The form letters, petition, and coupons listed no supporting reasons. The coupons indicated support for designation of 41,293 acres as described in the Amended Boundary Alternative. Four personal inputs opposing wilderness designation were submitted.

Several of the comments favoring wilderness designation reiterated supporting reasons mentioned in previous public review periods such as primitive recreation opportunities, scenic values, and desert bighorn sheep habitat. Other comments included: the area is a major landmark of National significance, natural, and the area has important archaeological sites from the Meso-American culture.

Several respondents supported the Amended Boundary Alternative because it leaves the core of the mountain range intact and is a good compromise. Other comments indicated support for wilderness designation of an area other than the 58,014-acre WSA. The acreage figures ranged from 58,000 to 65,872 acres. There were no maps or discussions of alternative boundaries included with these comments. Several respondents felt that the area designated should be larger than the amended boundary to provide a protective buffer zone around the wilderness. Several comments also indicated disagreement with the deletion of split-estate lands from the WSA.



## BIG HATCHET MOUNTAINS

A number of comments asserted that the Big Hatchet Mountains WSA should be designated wilderness because the area would provide primitive recreation opportunities for the growing population centers of the Southwest. Other commentators felt the area would be a valuable addition to the National Wilderness Preservation System in terms of ecosystem diversity.

Comments on the potential wilderness manageability of the Big Hatchet Mountains WSA included: discourage vehicular use of the Sheridan Canyon road, acquire or discourage development of oil and gas leases, and acquire State and private inholdings. Another comment regarding potential resource conflicts expressed the opinion that "unique and irreplaceable" areas should be protected rather than allowing oil and gas development.

Several comments made in the four personal inputs opposing wilderness designation stated that the scenery and solitude of the Big Hatchet Mountains could be protected under present BLM programs and the values protected by wilderness designation could be protected through less restrictive management. Four comments cited the area's mineral potential as a reason for opposing wilderness designation.

Other comments included: the withdrawal of 58,014 acres would extremely limit evaluation of the most prospective part of the Pedregosa Basin and closing ranch roads and jeep trails would have a negative impact on geologic field research and mineral exploration and development.

The Phelps-Dodge Corporation submitted a voluminous document including photographs and maps. Many of the comments in the document submitted by Phelps-Dodge addressed what they considered deficiencies in the New Mexico Wilderness Supplemental Draft Environmental Assessment (BLM 1983). Only those substantive comments addressing the Big Hatchet Mountains Wilderness Analysis Report (WAR) are summarized here.

Phelps-Dodge disagreed with the discussion of impacts to wilderness values if the area were left open for mineral activities as described under the No Action/No Wilderness Alternative. The Phelps-Dodge comments stated that the discussion failed to acknowledge that "only a small fraction of these areas would even be touched by any mineral activity," and "most areas which are affected are touched only by exploration activities which are easily rehabilitated." In addition, Phelps-Dodge's comments asserted that the document should at least recognize that the extent of disturbance caused by both hardrock and leasable mineral activities can be closely controlled by the BLM regulations applying to those activities.

Phelps-Dodge further asserted that the WAR failed to establish that the Big Hatchet Mountains WSA satisfies the statutory wilderness criteria and the WSA should not be recommended for wilderness designation. Reasons for their position included: the area has roads, wilderness values are impaired by inholdings, and the area's naturalness is impaired by man-made intrusions. The effects of the Sheridan Canyon road on the area's boundaries have been clarified in Chapter I, Land Status. Phelps-Dodge's comments also expressed the opinion that the WAR reflected an inadequate analysis of the Big Hatchet Mountains mineral values. Information regarding fluorite mineralization in the area has been incorporated into this report.



## B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to water, visual, cultural, air, recreation, realty actions, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.

## SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Expanding the WSA	This alternative was not considered further because it would require consideration of (1) lands not originally nominated for wilderness study and therefore unprotected by the BLM Interim Management Policy or (2) split estate lands already released from wilderness review. However, the effects of expanding the boundary through acquisition of inholdings and adjacent lands was considered as a measure to enhance management of the area.
An Alternative that Includes a Different Amended Boundary	Additional amended boundary alternatives were not analyzed because the amended boundary developed by BLM adequately balances wilderness values and potential oil and gas conflicts and mitigates manageability problems.
Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Minerals (Locatable)	No significant impacts to locatable minerals were identified; however, base and precious metals and gypsum are discussed because small acreages with moderate potential for these commodities are within the WSA.
Soils and Vegetation	Although soils and vegetation were identified Las Cruces District Final Wilderness Analysis Reports (Volume 2) (August 1984) as significant issues, further evaluation of the area's oil and gas potential indicates that the impacts on these resources would not be significant.
Wildlife	No significant impacts were identified for wildlife in general. Desert bighorn sheep and their habitat could be impacted because of conflicts with exploration for oil and gas resources and are therefore included in the impact analysis.
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.
Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
Amended Boundary (Proposed Action)	This alternative was evaluated to balance resource conflicts, wilderness values, and manageability conflicts.
No Action/No Wilderness	Required by the BLM Wilderness Study Policy.

## Issues Selected for Detailed Analysis

The quality of the area's wilderness values, the State endangered desert bighorn sheep, and oil and gas potential were identified as primary issues of concern during the initial scoping activities for this WSA. Issues regarding the desert bighorn sheep included the supplemental value of the sheep and the concern that wilderness designation would limit management options for the sheep.

A reevaluation of mineral potential based on a standardized classification system indicates only 6,700 acres of moderate potential for oil and gas in the WSA. Although the impacts to energy minerals would not be significant, this issue will be discussed because of (1) the petroleum industry's interest in the area, (2) the potential conflicts between oil and gas exploration and the desert bighorn sheep, and (3) public interest.

Two additional issues identified in the WAR and in public comments on the Draft EA included the wilderness manageability of portions of the WSA and the value of the area as an addition to the National Wilderness Preservation System in terms of ecosystem diversity and primitive recreation opportunities for the growing population of the Southwest.



## BIG HATCHET MOUNTAINS

### VI. ALTERNATIVES AND IMPACTS

#### A. All Wilderness

Under this alternative, the entire 58,014 acres of public land within the Big Hatchet Mountains WSA would be recommended suitable for wilderness designation. (See Map 23-1 for the WSA boundary.)

If designated wilderness, the existing uses and activities in the area and potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the BLM's Wilderness Management Policy (WMP) (BLM 1981). Certain management actions would occur under this alternative and are summarized in Chapter I, Proposed Action, Alternatives, and Issues.

##### 1. Impacts to Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection.

Most of the area could be managed to maintain high quality natural values and the outstanding opportunities for solitude and primitive recreation provided by the canyons and ridges of the vast and rugged Big Hatchet Mountain range. The removal of the unauthorized communication site on top of Big Hatchet Peak would slightly enhance naturalness. Periodic vehicle use on cherry-stemmed roads and the road through Sheridan Canyon would impact solitude locally. However, outstanding opportunities for solitude would still be available in other parts of the area. The management of the desert bighorn sheep population through the Habitat Management Plan (HMP) would further enhance the special features of the area. Approximately 89 percent of the total designated bighorn sheep habitat in the Big Hatchet Mountains would be legislatively protected under this alternative.

Should exploration drilling or development activities for oil and gas be initiated on the two pre-FLPMA oil and gas leases along the north and southwest boundaries of the area, it would not be possible to manage the 800 acres of the leases within the WSA parcels to maintain naturalness and outstanding opportunities for solitude because the pre-FLPMA leases are not covered by protective stipulations.

Manageability problems could occur in the area around U-Bar Ridge. The combination of a cherry-stemmed road, State land, split estate lands, and an existing pre-FLPMA oil and gas lease in an area of moderate oil and gas potential increases the possibility of exploration drilling. The surface disturbance and access requirements associated with drilling could result in significant degradation of naturalness and solitude in this part of the WSA.

##### 2. Impacts to Minerals

Despite moderate oil and gas potential on 6,700 acres in the pediment areas surrounding the Big Hatchet Mountains WSA, there has been no



exploration drilling on existing leases within the WSA and no production. Development of the two pre-FLPMA leases in the area could be allowed to impair wilderness values. There would be no economic impact on exploration and development costs on the two pre-FLPMA oil and gas leases because they have no special stipulations attached. Leaseholders of post-FLPMA leases could be impacted in the short-term (the life of the lease) since any exploration or development work that would impair wilderness values would not be allowed.

It is assumed that after wilderness designation, existing oil and gas leases would not be reissued if unexplored through drilling upon their expiration date. No new leases would be let after wilderness designation. On the other hand, if oil and gas drilling is initiated and in progress on the anniversary date of a lease, a 2 year lease extension would be granted. Should any wells go into production prior to the lease expiration date, they would be allowed to continue production until reserves are exhausted.

If a discovery were made in an area adjacent to the WSA, energy minerals would be impacted in the long-term because there would no longer be an opportunity to fully evaluate the oil and gas potential in the WSA. In the long-term, the impacts to energy minerals would consist of the forgone opportunities to explore an area of 6,700 acres with moderate potential for oil and gas accumulations and to fully evaluate the potential of the entire WSA.

Although there are currently only three existing mining claims, small areas of the Big Hatchet Mountains WSA have moderate potential for base and precious metals (180 acres) and gypsum (200 acres).

It is assumed that after wilderness designation, the location of new mining claims would not be allowed. However, development work, extraction, and patenting of mining claims existing in the Big Hatchet Mountains WSA as of the date of designation would be allowed if the claims are determined to be valid. A mineral examination and subsequent mineral report must confirm that as of the date of designation, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a reasonable prospect of success in developing a valuable mine. Undue and unnecessary degradation of wilderness character would not be allowed, and the use of mechanical and motorized equipment would be authorized only if there are no reasonable alternatives. A Plan of Operations for mining on valid existing claims would include reclamation measures to provide for restoration as near as practicable of the surface of the land disturbed.

Although existing valid claims could be explored and developed after wilderness designation, the mining companies could incur additional costs of operation depending on restrictions on acceptable mining methods and the type and location of acceptable access. Since additional exploration for locatable minerals outside of existing claim boundaries would also be prohibited, the minerals industry could be affected in the long-term since the full potential of the area could not be assessed. These



## BIG HATCHET MOUNTAINS

impacts to locatable minerals are not considered significant because of the minimal acreages involved.

### 3. Impacts to Desert Bighorn Sheep

The desert bighorn sheep would be managed under the Big Hatchets-Alamo Huecos HMP. Permits for helicopter and, in Romney Canyon, vehicular access to maintain existing wildlife waters and mineral licks could be authorized if there were no practical alternatives. Certain projects and monitoring studies proposed in the HMP would require State Director approval. The WMP specifically states that such projects are acceptable if they would promote perpetuation of a threatened or endangered species. Projects would be approved if the resulting changes are compatible with the preservation of wilderness character, consistent with wilderness management objectives for the area, and if the installations are the minimum necessary to accomplish the task. Should it be necessary, visitor use could be regulated under this alternative to prevent disturbance to the desert bighorn sheep.

If oil and gas exploration drilling is initiated on the 800 acres of the two pre-FLPMA leases within the WSA, the impacts on desert bighorn sheep would be insignificant since the leases are outside the area identified as designated desert bighorn sheep habitat.

The restrictions of wilderness management on surface disturbing and mechanized activities would provide long-term protection for the desert bighorn sheep population and habitat. Wilderness designation would provide added protection for the wildlife and habitat on approximately 13,000 acres along the periphery of the WSA not presently covered by the protective leasing stipulation for desert bighorn sheep.

### 4. Impacts to Livestock Grazing

Generally, motorized access on the 8 miles of existing vehicle trail within the designated wilderness would not be allowed. However, permits for vehicular access to maintain the following rangeland developments not accessed by existing roads could be authorized if there were no practical alternatives: a storage tank and trough on Heard Ranch (2024) and five dirt tanks on the Hatchet Ranch (2027). Slight impacts could result to the livestock operator when monitoring livestock activity because of restricted vehicular access. The overall impacts on livestock grazing would not be significant under this alternative.

### B. Amended Boundary (Proposed Action)

Under the Amended Boundary Alternative, 41,293 acres of public land within the Big Hatchet Mountains WSA would be recommended suitable for wilderness designation. (See Map 23-1 for the amended WSA boundary.) The amended boundary would exclude 16,721 acres of public land surrounding the Big Hatchet Mountain range. If the area within the amended boundary is designated wilderness, existing and potential uses (see Chapter III) would be regulated by the WMP (BLM 1981).



## 1. Impacts to Wilderness Values

Approximately 41,293 acres in the central part of the WSA where the highest quality wilderness values and special features are concentrated would be protected through long-term Congressional designation.

Approximately 16,721 acres surrounding the mountain range would not be protected by Congressional designation. Management of the excluded acreage as specified in land use plans would be subject to administrative change in the long-term. However, the exclusion of this acreage improves the manageability of the area to be designated wilderness. The manageability of the excluded area is impaired by State land, split estate lands, and 660 acres of pre-FLPMA oil and gas leases.

Although 140 acres of the area within the Amended Boundary are encumbered by a pre-FLPMA oil and gas lease, it is unlikely that activities on the lease would affect the manageability of the designated wilderness. The 140 acres under lease are in two parcels along the northern boundary road so existing access is adequate. Because of the minimal acreage involved and the locations of the two parcels, it could be possible to site proposed wells outside of the wilderness on the northern side of the boundary road.

The entire area within the amended boundary could be managed to retain its wilderness character. High quality natural values in the core of the WSA would be maintained as would the outstanding opportunities for solitude provided by the secluded canyons and ridges of the mountain range. Outstanding opportunities for hiking, backpacking, horseback riding, mountain climbing, and sightseeing would be maintained. Approximately 37,993 acres of desert bighorn sheep habitat (76 percent of the total designated habitat in the Big Hatchet Mountains) would be legislatively protected under this alternative. The desert bighorn sheep are an important special feature of the area.

## 2. Impacts to Minerals

It is assumed that after wilderness designation, no new leasing would be allowed on the 41,293 acres of public land within the amended boundary. Any leases within the amended boundary existing at the time of wilderness designation, if unexplored through drilling upon their expiration date, would not be reissued. Possibly, directional drilling from outside the amended boundary could be utilized to allow exploration and subsequent renewal of the affected leases. Directional drilling would increase operation costs.

The 16,721 acres excluded from the designated area would be available for exploration, leasing, and possibly exploration drilling and development. This acreage is located in the pediment areas of the Big Hatchet Mountains and around U-Bar Ridge and includes approximately 98 percent of the acreage identified as having moderate potential for oil and gas. Approximately 7,000 acres of the 16,721-acre area available for leasing would be leased with the protective stipulation for desert bighorn sheep. Directional drilling could be required for exploration or



## BIG HATCHET MOUNTAINS

development of leases on this 7,000 acres if it were determined that surface use or occupancy would adversely affect the desert bighorn sheep. All but 140 acres of the pre-FLPMA oil and gas leases would be excluded from the area designated wilderness.

The Amended Boundary Alternative would have a lower degree of conflict with energy mineral resources than the All Wilderness Alternative. The impacts to energy minerals would consist of the forgone opportunities to explore an area of approximately 100 acres with moderate oil and gas potential.

Under this alternative, the impacts to locatable minerals would be the same as those described under the All Wilderness Alternative.

### 3. Impacts to Desert Bighorn Sheep

Under the Amended Boundary Alternative, management of the desert bighorn sheep, existing wildlife projects, and implementation of the Big Hatchets-Alamo Huecos HMP would be impacted as described under the All Wilderness Alternative.

If oil and gas exploration drilling is initiated on the 140 acres of the two pre-FLPMA leases within the Amended Boundary, the impacts on desert bighorn sheep would be insignificant since the leases are outside the area identified as designated desert bighorn sheep habitat.

The restrictions of wilderness management on surface disturbing and mechanized activities would provide long-term protection for the desert bighorn sheep population and their habitat within the amended boundary. All but approximately 3,300 acres of the area within the amended boundary is designated desert bighorn sheep habitat. Wilderness designation would provide additional protection for the wildlife and wildlife habitat on the approximately 3,300 acres within the amended boundary not covered by the protective leasing stipulation for desert bighorn sheep.

### 4. Impacts to Livestock Grazing

Impacts to livestock grazing would be the same as those described under the All Wilderness Alternative, except that 6½ miles of vehicle trails would be closed to motorized use (compared to 8 miles under the All Wilderness Alternative) and most of the U-Bar allotment (2022) would be outside of the amended boundary.

### C. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 58,014 acres of public land in the Big Hatchet Mountains WSA would be recommended unsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III and summarized in Chapter I, Proposed Action, Alternatives, and Issues.



1. Impacts to Wilderness Values

The wilderness values and special features of the Big Hatchet Mountains WSA would not be provided with long-term Congressional protection.

Oil and gas exploration drilling in the pediment areas of the Big Hatchet Mountains would degrade natural values and opportunities for solitude in these areas. The existing nonmotorized types of recreation would be impacted by the deterioration of natural values and the increased presence of man. The oil and gas leasing protective stipulation for desert bighorn sheep, covering approximately 77 percent of the area within the WSA would restrict surface uses or occupancy to protect the desert bighorn sheep. As a result, some protection of existing wilderness values would be provided indirectly.

Under the No Action/No Wilderness Alternative, the impacts to wilderness values could be significant in the long-term.

2. Impacts to Minerals

Under this alternative, the entire 58,014 acres within the WSA would be open to leasing. However, approximately 77 percent of the area is designated desert bighorn sheep habitat and would be leased with a protective stipulation for these values. The area included in the designated habitat generally excludes more of the mountain pediments than the amended boundary, especially along the northeast and west-central slopes of the mountain range. Surface use or occupancy would not be allowed in the designated habitat area if it would have adverse effects on the desert bighorn sheep. Compliance with the protective stipulation could result in increased operation costs. Although the No Action/No Wilderness Alternative would have a lower degree of conflict with energy minerals than the All Wilderness or Amended Boundary Alternatives, the restrictions of the leasing stipulation could impact energy mineral resources.

There would be no significant impacts on locatable minerals exploration and development under this alternative. Mining activities would be regulated to prevent unnecessary and undue degradation under the Surface Management Regulations (43 CFR 3809).

3. Impacts to Desert Bighorn Sheep

The desert bighorn sheep would be protected from oil and gas exploration drilling and development by the protective leasing stipulation. The Big Hatchets-Alamo Huecos HMP actions would also protect desert bighorn sheep habitat.

4. Impacts to Livestock Grazing

All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. Grazing permittees would be allowed to use vehicles on existing trails to check livestock. Under this alternative, there would be no impacts to livestock grazing.







## APPENDIX 24

### BLUE CREEK WSA (NM-030-026)

#### I. GENERAL DESCRIPTION

##### A. Location

The Blue Creek Wilderness Study Area (WSA) is located 6 miles northwest of Redrock, New Mexico, north of the Gila River.

The U.S. Geological Survey (USGS) topographic map covering the WSA is the Canador Peak, New Mexico quadrangle at the 15-minute scale.

##### B. Climate and Topography

The Blue Creek WSA is characterized by a semiarid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly greater than 12 inches. A wide variation in annual precipitation is characteristic of southern desert climates. More than half of the moisture normally falls during July, August, and September from convective thundershowers that are commonly intense and of short duration. The winter precipitation is mainly from gentle-intensity frontal type storms that may produce some light snow, which seldom accumulates on the ground.

During the summer months, daytime temperatures may exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the low 20's.

Winds are generally from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The Blue Creek WSA is dominated by Black Mountain, an elongated northwest trending topographical feature. The mountain is composed of black basalt. Slopes are gentle to moderate. Relief is in excess of 1,000 feet. Secondary features of the area include about 1½ miles of the Blue Creek arroyo, a drainage running south to the Gila River, and Seep Spring Draw.

##### C. Land Status

The Blue Creek WSA is comprised of 14,896 acres of public land. There are 1,280 acres of State inholdings. There are no private inholdings. (See Map 24-1 for land status.)



**MAP 24  
BLUE CREEK WSA  
(NM-030-026)**

Proposed Action--No Action/  
No Wilderness Alternative

**MAP 29  
GILA LOWER BOX WSA  
(NM-030-023)**

Proposed Action--  
Amended Boundary

- WSA Boundary
- - - Amended Boundary
- BLM
- Private
- State

State and private ownership  
is identified only inside  
the WSA boundary.

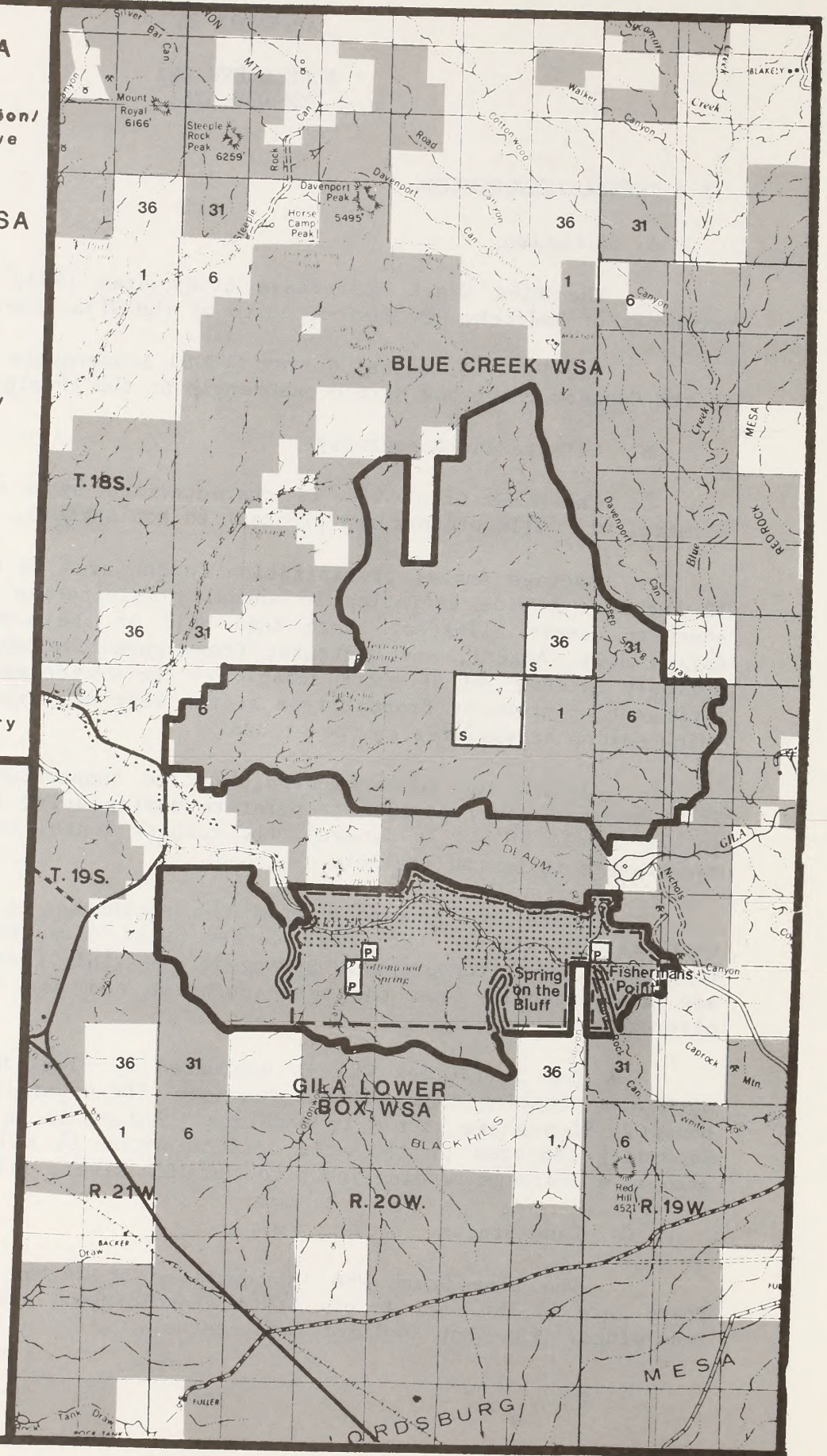
Scale: 1/2 inch=1 mile

Source: USDI BLM, Las  
Cruces District, January  
1985

MAP 24-1  
MAP 29-1

**LAND STATUS**

■ Gila Lower Box  
Riparian ACEC





## D. Access

Legal access to the northern portions of the WSA is provided by County Road A039 which runs northeast off of State Highway 82 approximately  $1\frac{1}{2}$  miles east-southeast of Virden, New Mexico. County Road A030 runs east from State Highway 82 approximately  $\frac{1}{2}$  mile north of the Gila River bridge and provides legal access along the southern boundary of the WSA.

Additional physical access is provided by the roads to Mexican Springs and the X-Bar U windmill. These roads run south from County Road A039 along the western and eastern slopes of Black Mountain, respectively.

## E. Proposed Action, Alternatives, and Issues

## DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Action/No Wilderness (Proposed Action)
°Manage 14,896 acres as wilderness.	°Manage 14,896 acres without wilderness protection.
-Attempts would be made to acquire 1,280 acres of State land within the WSA and 480 acres of private land adjacent to the WSA.	-No special attempts would be made to acquire State and private lands.
-Close 6 miles of vehicle trails.	-Vehicle use would be allowed to continue.
-14,896 acres would be closed to energy minerals leasing and mining claim location.	-14,896 acres would be open for energy minerals leasing and mining claim location.
-Require permits for vehicular access to a windmill, storage tank, 3 troughs, 2 corrals, 2 dirt tanks, and 2 miles of pipeline on the Shay allotment (1059).	
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
-Water and erosion control structures could be constructed if nonimpairing and approved by the BLM State Director.	-Water and erosion control structures could be constructed.
	-Powersite withdrawals could be utilized for powersite facilities.



SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues Wilderness Values
All Wilderness (14,896 acres)	Wilderness protection would maintain the area's existing natural values and outstanding opportunities for solitude and primitive recreation. Because of surrounding land status patterns and the locations of existing rangeland developments, the area could not be managed to provide a quality wilderness experience.
No Action/No Wilderness (14,896 acres) (Proposed Action)	The area's wilderness values would not be provided with long-term Congressional protection. Installation of water control and erosion control structures could cumulatively degrade the area's natural values and opportunities for solitude and primitive recreation. Powersite facilities could also degrade wilderness values.



Black Mountain is the major topographic feature of the Blue Creek WSA.



## II. EXISTING RESOURCES

### A. Geology

The area surrounding the Blue Creek WSA is dominated by fault block mountains, extensive volcanics, and river and shallow lake deposits. The oldest exposed rocks in the WSA are Tertiary volcanics consisting of andesite flows and tuffs. Overlying the Tertiary volcanics are younger Quaternary rhyolitic and latitic tuffs interbedded with a thin sedimentary section of sandstone and conglomerates. Younger basaltic andesite forms Black Mountain.

Structurally, Black Mountain is a volcanic fault block uplifted along the eastern and western edges. East to west trending faults cut across the mountain in several places. A series of faults is evident at the southern end of the mountain and another system occurs west of the mountain in the vicinity of Mexican Springs.

### B. Water

The Blue Creek WSA is situated within the Gila River Basin and contributes to the larger Lower Colorado River Basin.

Surface water within the WSA drains into the Gila River through an ephemeral stream system. Blue Creek is a principal tributary to the Gila River and is perennial in the upper reaches north of the WSA. However, underground flow predominates in the lower reaches of the drainage along the southeast boundary of the WSA. Surface flow in the ephemeral streams generally occurs only as a result of summer thundershowers.

Ground water is available from the Gila Conglomerate in a narrow band on either side of Blue Creek. Lower yields are expected in the volcanic rocks and bolson fill. Ground water movement is towards the Gila River, and most recharge occurs in the stream channels during periods of flood runoff. Ground water quality in the area is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

The major soil type within the Blue Creek WSA occurs on Black Mountain and is characterized by shallow, stony soils over basalt bedrock. Some areas of rock outcropping occur on the steeper slopes.

On the more level land to the north of Black Mountain, the soils are deeper and have a gravelly loam surface texture. In the Blue Creek drainage, the soils consist of stratified sands, silts, clays, and gravels. Surface textures range from silty clay loam to gravelly sands.



## BLUE CREEK

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Blue Creek WSA consist of four major types:

Vegetation Type	Range Sites	Federal Acres
Juniper-mixed		
mountain shrub	Mountain	7,128
Creosote	Malpais (lava flow)	5,262
Creosote	Breaks	2,358
Deciduous trees	Bottomland	148

Juniper trees, acacia, Mormon tea, allthorn, sumac, graythorn, creosote, mesquite, and snakeweed shrubs are the dominant vegetation on the mountain slopes of this WSA. Grass species present are gramas, tobosa, bush muhly, dropseed, curly mesquite, foxtail, and threeawns.

Creosote prevails on the malpais (lava flow) area. There are scattered juniper trees with associated shrub species such as snakeweed, mesquite, and sumac. Numerous varieties of grass species make up a large part of the vegetation on this range site. Grass species include tobosa, bush muhly, gramas, threeawns, Arizona cottontop, foxtail, and cane bluestem. This range site occurs in the southwestern part of the WSA and on the east slopes of Black Mountain.

Breaks, a highly erodable range site, occur along the Gila River. The soils within this range site are stabilized by shrub species such as creosote, snakeweed, tarbush, mesquite, mimosa, yucca, Mormon tea, rabbitbrush, cacti, and numerous grass species including tobosa, bush muhly, threeawns, black grama, fluffgrass, dropseeds, and other gramas.

Deciduous trees in the deeper soils of the bottomland site along Blue Creek include ash, cottonwood, Arizona sycamore, and willow. Some juniper trees are also present. However, tree species are few and far between with grasses being more dominant in this area. Grass species include bush muhly, green sprangletop, Arizona cottontop, sideoats grama, threeawns, and dropseeds.

#### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP AND USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.



Species: Ferocactus wislizenii - southwestern barrel cactus  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

#### E. Wildlife

The Blue Creek WSA is largely mixed shrub mountain and creosote habitat sites. There are small areas of grass, mixed shrub rolling upland, and pseudoriparian sites. The latter is in the portion of Blue Creek that runs through the WSA.

Most of these sites do not support diverse wildlife communities. A pseudoriparian site has somewhat more diversity, but the Blue Creek WSA is not an exceptionally valuable wildlife area.

Big game occur in low numbers in the WSA. There are a few mule deer and also some javelina. The latter are close to their northernmost limit of distribution in this area.

#### F. Visual

Black Mountain is a rounded undulating mountain surrounded by rolling foothills. Vegetation forms broken and irregular patterns which generally follow drainages. The scenic quality rating is B (moderate).

Portions of the Blue Creek WSA are in three Visual Resource Management Classes (VRM) as follows: Class II--8,156 acres, Class III--809 acres, and Class IV--5,931 acres.

#### G. Cultural

There are no known cultural resources in the Blue Creek WSA. The probability of significant sites in most of the WSA appears poor. However, the southeastern portion of the WSA could contain significant sites because of proximity to the Gila River and the availability of several fairly flat areas.

#### H. Air

Generally, the quality of air within the Blue Creek WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



## BLUE CREEK

### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

##### 1. Energy Minerals (Geothermal)

As of December 1, 1984, there were no mineral leases present in the area.

Although travertine deposits indicative of the one-time presence of thermal springs occur at Cliff Roy mine, 4 miles to the southeast, and in the eastern portion of the Gila Lower Box WSA, 1½ miles to the south, none have been observed in the Blue Creek WSA. Furthermore, the volcanic activity that has occurred in the area is not the type generally associated with geothermal activity, and is probably too ancient to indicate any current potential. Because of this, the potential for geothermal resources within the Blue Creek WSA is considered low.

##### 2. Nonenergy Minerals (Manganese)

As of September 17, 1984, there were no mining claims recorded with the BLM in the WSA.

Manganese deposits and workings are visible at the Black Bob mine, ¾ of a mile south of the WSA, the Consolation mine, 2 miles southeast of the WSA, and the Cliff Roy mine, 4 miles southeast of the WSA. Interestingly, these mines are aligned in a north 45° west trend that, if extended to the northwest, would pass through the Blue Creek WSA. The manganese deposits found at these workings were probably deposited by ascending thermal waters, and occur as shoots along northwest trending veins in volcanic agglomerate. No manganese deposits are known to exist in the WSA; however, even though geologic indicators are favorable for its occurrence, it is doubtful that deposits of significant commercial value would be found. Therefore, the potential for manganese resources in the Blue Creek WSA is low.

#### MINERAL RESOURCES POTENTIAL OF THE BLUE CREEK WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Geothermal	Tertiary volcanics	Low	--
Nonenergy Minerals			
Manganese <sup>a/</sup>	Epithermal hypogene deposits in a northwest trend southeast of WSA	Low	--

Notes: \*Acreage was not calculated for areas with low potential.

<sup>a/</sup>Listed on the National Defense Stockpile Inventory of Strategic  
and Critical Minerals.



## B. Watershed

Within the Blue Creek WSA, water is used primarily by livestock and wildlife. Water developments that are within the WSA boundary include two dirt tanks, a pipeline system, and one well facility (see Chapter III, Livestock Grazing). The Blue Creek WSA is part of the Gila-San Francisco declared underground water basin and ground water use is administered by the New Mexico State Engineer.

Water draining the Blue Creek WSA, as both surface flow and underground flow, contributes to the Gila River system where downstream uses include irrigation, limited warm water fishery, livestock and wildlife watering, secondary contact recreation, and limited drinking water.

A watershed decision in the Gila Management Framework Plan (MFP) (BLM 1977) identifies an extensive area northwest, west, south, and southeast of Black Mountain where construction of water control structures to reduce flood and sediment damages might be feasible. Approximately 1/3 of the identified area lies within the Blue Creek WSA.

## C. Livestock Grazing

## 1. Allotments

Parts of four grazing allotments are within the Blue Creek WSA. A small area in the middle of the WSA is ungrazed by livestock due to steep slopes. Licensed grazing use on public land includes cattle and a few horses.

ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
R. Johns 1028	2,644	288	1,838	70%
R. Johns 1029	960	192	160	17%
R. Shay 1059	35,591	6,240	10,905	31%
Caprock 1078	30,028	4,884	1,993	7%
TOTAL			14,896	



## 2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
R. Shay 1059	windmill, trough, storage tank, and corral	T. 19 S., R. 19 W., Sec. 8
	2 dirt tanks	T. 18 S., R. 20 W., Sec. 23
	trough	T. 19 S., R. 19 W., Sec. 6
	trough	T. 18 S., R. 20 W., Sec. 25
	corrals	T. 18 S., R. 19 W., Sec. 31
	pipeline	2 miles
	interior fence	5 miles

Boundary Fences:	Caprock (1078) and Johns (1028)	½ mile
	Caprock (1078) and Shay (1059)	3½ miles
	Shay (1059) and Johns (1029)	1 mile
	Shay (1059) and Johns (1028)	3½ miles

Note: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

## 3. Potential Rangeland Developments

The Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (BLM 1983) on energy minerals leasing and rangeland management proposes two erosion control dams on the R. Shay allotment (1059) in T. 18 S., R. 20 W., Section 14, for watershed protection. This location is tentative.

## D. Recreation

Very little recreational use presently occurs within the WSA. Some local residents hunt deer in the WSA. Public comments indicated that some Silver City residents enjoy hiking in the area.

## E. Realty Actions

A temporary State Aid Withdrawal was located within the Blue Creek WSA at the time the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983) was released. The State of New Mexico completed their land selection and the withdrawal was reviewed by the BLM. The withdrawal was revoked effective October 7, 1983.

A portion of the Blue Creek WSA is withdrawn for use in connection with the San Carlos Indian Irrigation Project. The purpose of the withdrawal is watershed protection.



In addition, segments of the WSA are withdrawn by Executive Order for powersite reservations. These lands are currently being reviewed by the U.S. Geological Survey, Water Resources Division, to determine their importance for powersite locations. Those withdrawals found not feasible will be revoked.

Duncan Valley Electric Company has two rights-of-way (ROWs) for transmission lines. One is just outside the southwest boundary of the WSA and the other forms part of the northwest boundary.

The Sunset Ditch Company was granted a ROW in 1977 for construction and maintenance of a flood control project designed to protect the existing community irrigation system from sedimentation, side drainage flooding, and debris damage. The portion of the ROW within the WSA comprises a total of 5.26 acres at two separate sites in T. 19 S., R. 20 W., Section 7, SE $\frac{1}{4}$ NW $\frac{1}{4}$  and SW $\frac{1}{4}$ NW $\frac{1}{4}$ . Debris basins are located on both of these sites.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

Numerous rangeland and watershed developments are located within the Blue Creek WSA. These include 2 dirt tanks, 2 corrals, 3 drinking troughs, 2 miles of pipeline, a windmill and storage tank, 13 miles of fence, and 2 debris basins associated with the Sunset Ditch flood control project. There are also approximately 6 miles of vehicle routes within the WSA. These imprints of man are concentrated on Black Mountain's northeast slopes and in Seep Springs Draw and Blue Creek and degrade the naturalness of these topographic features. Since the cumulative impacts of these developments are substantially unnoticeable when considering the entire Blue Creek WSA, this area marginally meets the required naturalness criterion.

##### b. Solitude

Outstanding opportunities exist for a visitor to feel isolated from the evidence of other people within the WSA. These opportunities are primarily the result of the area's large size and, to a lesser degree, the WSA's topographic diversity.

Opportunities for solitude in the southwest corner of the WSA are slightly impacted by traffic on State Highway 82 and the roads and canals which form parts of the WSA boundary.

##### c. Primitive and Unconfined Recreation

Opportunities for primitive and unconfined recreation are considered outstanding due to the area's size and topography. The quality of these opportunities are, however, negatively impacted by land status and the location of rangeland developments.

Land ownership patterns in the WSA disrupt the continuity of Black Mountain. The northern end of Black Mountain and part of the surrounding foothills (T. 18 S., R. 20 W., part of Sections 22 and 27) are in private ownership. Two State sections, T. 19 S., R. 20 W., Section 2, and T. 18 S., R. 19 W., Section 36, are located in the center of Black Mountain. This combination of State and private lands reduces the opportunity to enjoy an unconfined recreational experience in the WSA. Users of the area are unable to hike around the base or along the ridge of Black Mountain without crossing State or private lands.

The locations of rangeland developments impact each of the WSA's major topographic features which in turn affects the quality of hiking or backpacking opportunities. Visitors hiking along the eastern slopes of Black Mountain can easily see the dirt tanks located in T. 18 S., R. 20 W.,



Sections 23 and 36 (State inholding). When the hiker is below or north of the peak in Section 34, two of the tanks come into view. Visual intrusions located close to the mountain reduce the feeling of being isolated or in an isolated area.

While hiking in the bottom or along the rims of the WSA's two major canyons (Blue Creek and Seep Springs Draw), visitors again see rangeland developments. Several drinking troughs and a pipeline are located in Seep Springs Draw. A windmill, storage tank, and corrals are located in the canyon of Blue Creek.

The 13 miles of grazing allotment boundary and interior pasture fences within the WSA limit opportunities for horseback riding. An interior pasture fence runs along the spine of Black Mountain, restricting movement between the east and west sides of the mountain. Fences are also located in the eastern and southwestern parts of the WSA.

Recreational opportunities are further reduced by the limited recreational resources within the WSA. The opportunities for primitive recreation are of no greater quality or diversity than recreational opportunities in any undeveloped mountainous area in the region.

## 2. Special Features

The Blue Creek WSA provides habitat for a Bureau sensitive plant species proposed for Federal listing and a special concern element identified by the New Mexico State Heritage Program (see Chapter II, Vegetation). These are ecological features of scientific value.

## 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

## 4. Diversity

### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the area as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:



## BLUE CREEK

<u>Vegetation Type</u>	<u>Acres</u>
mountain mahogany-oak scrub	7,128
creosote	7,620
northern flood plain forest	148

### b. Distance From Population Centers

The WSA is approximately 3 hours driving time from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from El Paso, Texas; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.

### B. Manageability

Several factors affect the manageability of the Blue Creek WSA: land ownership, location of rangeland developments, existing rights-of-way, and withdrawals. The effects of these factors on manageability are assessed in terms of their relationship to the major topographic features of the WSA.

The primary topographic feature of the WSA is Black Mountain. The mountain dominates the WSA and provides the majority of opportunities for solitude and primitive recreation. Topographic features of secondary importance are Blue Creek and Seep Springs Draw. The northern end of Black Mountain is in private ownership and the center of Black Mountain and portions of Blue Creek are in State ownership.

As discussed earlier in Chapter IV, Primitive and Unconfined Recreation, land ownership patterns and the location of rangeland developments have a negative impact on the quality of the WSA's opportunities for primitive and unconfined recreation. Because of these factors, the area cannot be managed to provide a high quality recreational opportunity.

In addition, nonwilderness uses on the private land adjacent to the north boundary of the WSA or on the State land in the center of Black Mountain could degrade existing wilderness values. The most likely potential future uses on these parcels would be additional rangeland developments, which would degrade natural values and additionally impact primitive recreation opportunities.

Opportunities for solitude are somewhat impacted by the highway, roads, and canals along the southwest corner of the WSA. Solitude in this part of the WSA would be occasionally impacted when the Sunset Ditch Company maintains flood control structures in T. 19 S., R. 20 W, Section 7. The remainder of the WSA may be managed to provide opportunities for solitude.

The Duncan Valley Electric Company transmission lines have a minimal impact on manageability. These transmission lines are generally visible for about  $\frac{1}{2}$  mile inside the WSA. The lines do serve as on-the-ground identification of the area's boundary and thus may improve the BLM's ability to manage the area.



The potential uses of approximately 520 acres under powersite withdrawal in the southwest and southeast corners of the WSA do not pose a manageability problem, but rather a resource conflict. It is highly unlikely that the area would be designated wilderness before the powersite withdrawal issue is resolved. It is assumed that the issue of powersite development versus wilderness will either be settled administratively by a revocation of the withdrawals before the matter reaches Congress, or the matter will be settled by Congress as it decides whether these parcels will be dedicated to wilderness or power development.

The San Carlos Indian Irrigation Project Withdrawal also does not pose manageability problems. The management restrictions of wilderness would not conflict with the purpose of this withdrawal, which is watershed protection.

Considering all of the above factors, the BLM could not manage the Blue Creek WSA to provide high quality wilderness recreation opportunities.

The existing natural values on the public land in the WSA could not be maintained if nonwilderness uses on the adjacent private land or State land inholdings result in additional accumulation of the imprints of man. Management of the Blue Creek WSA as wilderness would require acquisition of adjacent private land and State inholdings. Should the area be designated wilderness, the lands legally described below should be considered for acquisition.

<u>Legal Description</u>	<u>Acres</u>
State Land	
T. 18 S., R. 20 W., Section 36, All	640
T. 19 S., R. 20 W., Section 2, All	640
TOTAL	1,280
Private Land	
T. 18 S., R. 20 W., Section 22, W $\frac{1}{2}$ E $\frac{1}{2}$ , E $\frac{1}{2}$ W $\frac{1}{2}$	320
Section 27, W $\frac{1}{2}$ NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$	160
TOTAL	480



## V. CONSULTATION AND COORDINATION

### A. Public Involvement Overview

Public comments were received on the Blue Creek unit during both the New Mexico Wilderness Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). The majority of the initial inventory comments opposed wilderness review of the area. The rationale cited lack of basic wilderness characteristics, poor configuration for management, and resource conflicts with minerals and grazing. The majority of comments on the 1980 WSA Proposals supported wilderness review of the area, listing the presence of basic wilderness criteria as rationale.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983), 23 personal inputs were received on the Blue Creek WSA. The majority of these comments (14) favored wilderness designation of the area.

Many of the comments favoring wilderness designation listed basic wilderness values and ecological and cultural supplemental values as rationale. Other pro-wilderness comments included expressions of disagreement with the use of manageability conflicts to support a nonsuitable wilderness recommendation and general statements that the Blue Creek WSA is manageable.

The New Mexico Natural History Institute suggested boundary adjustments to exclude rangeland developments in the southern part of the WSA and also indicated that, "It is possible that inclusion in a Gila River ACEC with tough provisions barring ORVs and further range improvements, rather than wilderness designation, would suffice for this area. But because no such protection was proposed in the recent Management Framework Plan Amendment, and because of your demonstrated unwillingness to protect areas that you do designate for protection (notably Aden Lava Flow RNA) we think that recommendation as wilderness is the prudent course for Blue Creek."

Most of the nine personal inputs opposing wilderness designation for the Blue Creek WSA indicated agreement with the BLM's assessment of the area and the nonsuitable recommendation. Opposing comments also cited the potential for manganese deposits and oil and gas accumulations at depth.

### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to minerals, water, soils, vegetation, wildlife, visual, cultural, air, recreation, and realty actions are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



## SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Amended Boundary	The New Mexico Natural History Institute suggested redrawing the boundary to exclude existing and proposed rangeland developments from the southern part of the WSA to improve manageability. This alternative was not considered because most of the existing and proposed rangeland developments are actually along the northeast slopes of Black Mountain and in the Blue Creek drainage. Redrawing the WSA boundary to exclude these developments would have resulted in a convoluted boundary without improving the manageability of the area.
Inclusion of the Blue Creek WSA in a Gila River Area of Critical Environmental Concern (ACEC)	This alternative was not considered because none of the resources of the Blue Creek WSA meet the relevance and importance criteria necessary for an area to be identified as an ACEC.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Action/ No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

Issues Selected for Detailed Analysis
Two primary issues identified for this WSA in the initial scoping activities, the WAR, and in public comments on the Draft EA are wilderness values and the potential for managing the area as wilderness. BLM resource specialists' identification of issues focused on the quality of the area's wilderness values and the effects of land status patterns and location of rangeland developments on wilderness manageability.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 14,896 acres of public land within the Blue Creek WSA would be recommended suitable for wilderness designation. (See Map 24-1 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area, and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the existing natural values and outstanding opportunities for solitude and primitive recreation present in the area with long-term Congressional protection. The area would be specifically managed to maintain the existing wilderness values. However, several factors would impact the capability of the BLM to manage the Blue Creek WSA as wilderness in the long-term. Nonwilderness uses on the private land adjacent to the north boundary of the WSA or on the State land in the center of Black Mountain could degrade existing natural values through the accumulation of imprints of man. The impacts could be minimal to major depending on the location, type, and extent of development and access requirements. In addition, the non-Federal lands and location of rangeland developments affect the capability of managing the area to provide high quality recreational opportunities. Wilderness recreationists are unable to hike along the ridge of Black Mountain or around the base of the mountain without crossing non-Federal lands and viewing rangeland developments.

Since the BLM could not manage the Blue Creek WSA in the long-term to provide a quality wilderness experience, the impacts to wilderness values under this alternative would be significant.

#### 2. Impacts to Livestock Grazing

Generally, motorized access on the approximately 6 miles of existing vehicle trails within the designated wilderness would not be permitted. However, if there were no practical alternatives, permits for vehicular access could be authorized for maintenance of the windmill, storage tank, 3 troughs, 2 corrals, 2 dirt tanks, and 2 miles of pipeline within the WSA on the Shay allotment (1059).

Checking cattle by vehicle in the WSA would not be allowed. The permittees would be allowed to check cattle either on horseback or foot. This could result in less effective livestock management and an impact on costs of the operation, depending on the use normally made of the trails by motor vehicles. Overall, impacts to livestock operators would consist primarily of inconveniences due to restricted vehicular access.



B. No Action/No Wilderness (Proposed Action)

Under the No Action/No Wilderness Alternative, the entire 14,896 acres of public land within the Blue Creek WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

1. Impacts to Wilderness Values

The wilderness values of the Blue Creek area would not be provided with long-term Congressional protection. Management of the area as specified in land use plans would be subject to administrative change in the long-term.

The construction of the water control structures proposed in the Gila Management Framework Plan (MFP) (BLM 1977) and the erosion control structures proposed in the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983) for watershed protection would degrade the quality of the area's naturalness and opportunities for solitude and primitive recreation because of the cumulative effects of additional man-made improvements in the area. The water control structures would be located in the southwest part of the WSA which is already impacted by fences, jeep trails, and the Sunset Ditch Company's flood control structures. The two erosion control structures would be constructed in the northeast part of the WSA. The east slopes of Black Mountain are already impacted by rangeland developments.

Powersite facilities could also degrade wilderness values in the southeast and southwest parts of the WSA. The impacts could be minimal to major depending on the location, type, and extent of development and access requirements.

The impacts to wilderness values under this alternative could be significant.

2. Impacts to Livestock Grazing

All rangeland developments would be checked and maintained on a convenience basis using motorized equipment. The permittees would be allowed to use vehicles as at present to check cattle. There would be no impacts to livestock grazing.







## APPENDIX 25

### CEDAR MOUNTAINS WSA (NM-030-042)

#### I. GENERAL DESCRIPTION

##### A. Location

The Cedar Mountains Wilderness Study Area (WSA) is located in southwestern Luna County. The WSA is approximately 20 miles southwest of Deming, New Mexico.

The U.S. Geological Survey (USGS) topographic maps covering the WSA are the Hat Top Mountain, Flying W Mountain, and Gage, SE quadrangles. All of these are New Mexico quadrangles at the 7½-minute scale.

##### B. Climate and Topography

The Cedar Mountains WSA is characterized by an arid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly above 9 inches, with locally larger amounts at higher elevations. A wide variation in annual precipitation is characteristic of arid climates. More than half of the total annual precipitation occurs from July to September. Rainfall during these months usually is from convective thundershowers that are commonly brief and intense.

During the summer months, daytime temperatures quite often exceed 100°F at elevations below 5,000 feet. Average monthly maximum temperature during July, the warmest month, is in the upper 90's. In January, the coldest month, average monthly minimum temperature is in the upper 20's. Slightly cooler temperatures can be expected throughout the year at higher elevations.

Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The Cedar Mountains WSA contains a 4-mile segment of the Cedar Mountain Range. The Cedar Mountains are essentially a northwest-southeast trending ridge with scattered peaks. Drainages are steep and rocky at their origins along the mountain ridge. The lower elevations are characterized by more rolling, rounded hills and broader drainages.

Major topographic features within the WSA include Old Baldy Peak, Rock Hole Canyon, and the north half of Flying W Mountain. Flying W Mountain, at 6,217 feet, is the highest point in the Cedar Mountain Range.



## CEDAR MOUNTAINS

### C. Land Status

The WSA contains 14,911 acres of public land. There are no State or private lands within the WSA boundary. (See Map 25-1 for land status within the WSA boundary.)

### D. Access

There is no legal access to the Cedar Mountains WSA. Physical access is available by way of ranch roads on the north, east, and west boundaries.

Access to the north and east boundaries is via Interstate Highway 10 to the Gage exit, about 19 miles west of Deming, then south on County Road C020 for approximately 5 miles to County Road C019. After approximately 9 miles southwest on C019, a ranch road branches off to the south. This road leads into a network of ranch roads that provide physical access to the north and east boundaries of the WSA.

Access to the west boundary of the WSA is via County Road C001 that runs northwest from State Highway 9. The county maintained road terminates on private land at the Flying W ranch headquarters. The WSA boundary is  $\frac{1}{4}$ -mile west of the headquarters across private land.



Cedar Mountains WSA.



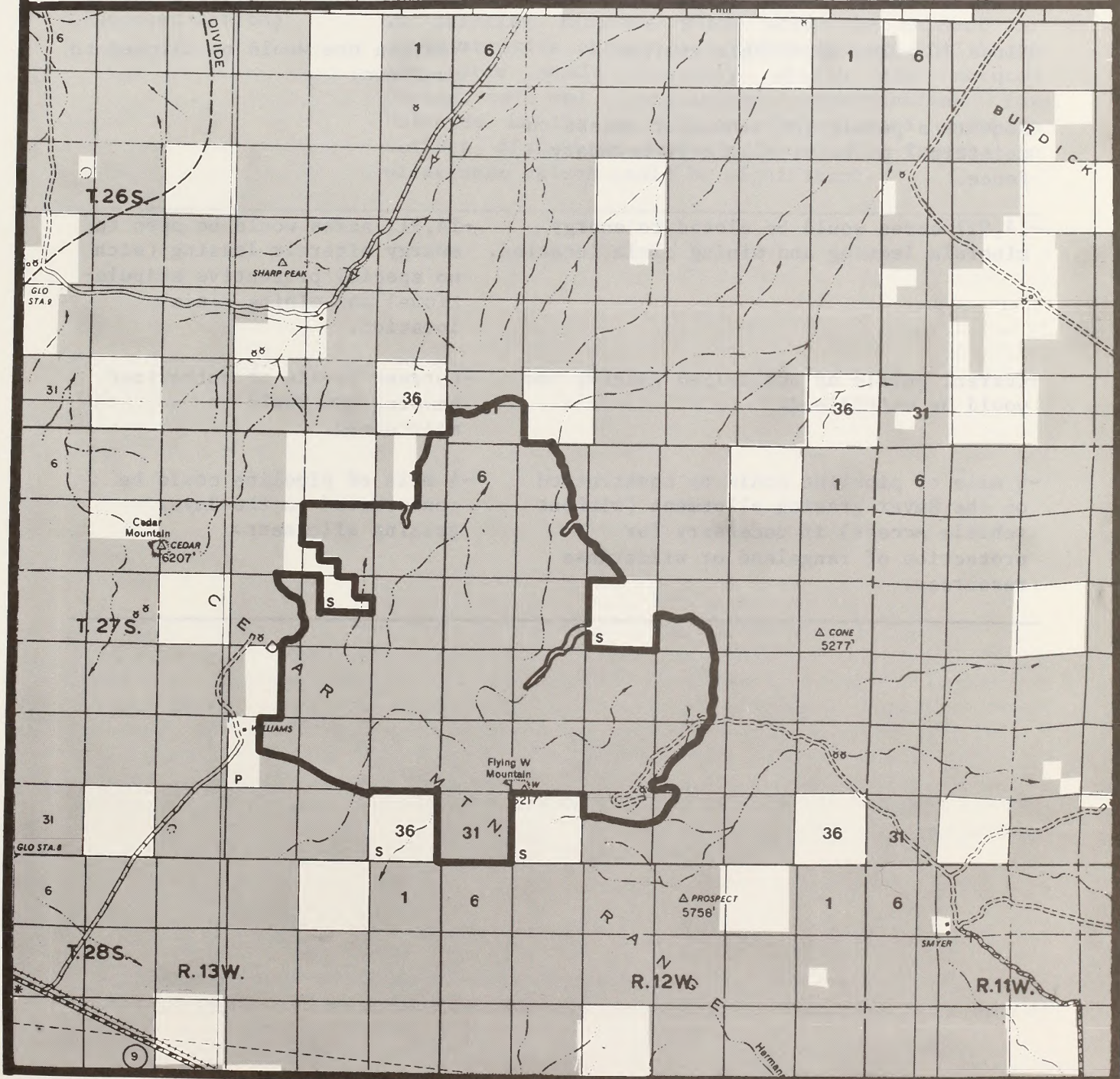
**CEDAR MOUNTAINS WSA (NM-030-042)**  
Proposed Action--No Action/No Wilderness Alternative

- WSA Boundary
- BLM
- Private
- State

MAP 25-1  
LAND STATUS

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District,  
January 1985.





CEDAR MOUNTAINS

E. Proposed Action, Alternatives, and Issues

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Action/No Wilderness (Proposed Action)
°Manage 14,911 acres as wilderness.	°Manage 14,911 acres without wilderness protection.
-Attempts would be made to acquire 1,600 acres of State land adjacent to the WSA.	-No special attempts would be made to acquire State land.
-Close 10 miles of vehicle trails.	-Vehicle use would be allowed to continue.
-Require a permit for vehicular access to maintain 2 miles of allotment boundary fence.	
-14,911 acres would be closed to energy minerals leasing and mining claim location.	-14,911 acres would be open to energy minerals leasing (with no special protective stipulations) and mining claim location.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
-½ mile of pipeline could be constructed on the Smyer grazing allotment (without vehicle access) if necessary for protection of rangeland or wilderness resources.	-½ mile of pipeline could be constructed on the Smyer grazing allotment.



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues
	Wilderness Values
All Wilderness (14,911 acres)	Wilderness protection would maintain the area's existing natural appearance, outstanding opportunities for solitude, and special ecological and cultural features.
No Action/No Wilderness (14,911 acres) (Proposed Action)	Wilderness values would not receive long-term Congressional protection. Management as specified in existing land-use plans would be subject to administrative change over the long-term. Although the area would probably retain its natural appearance and outstanding opportunities for solitude in the short-term, future uses could be surface disturbing and the resulting impacts to wilderness values could be significant.



## CEDAR MOUNTAINS

### II. EXISTING RESOURCES

#### A. Geology

The Cedar Mountains are a northwest-trending fault block of Tertiary volcanics. The volcanic rocks consist mainly of basalt, andesite, and latite flows and rhyolite welded tuffs. Numerous northwest-trending faults post-date the volcanics. Paleozoic and Mesozoic limestones crop out in a few areas in the Cedar Mountains and may be present at depth in an extensive area of the subsurface.

#### B. Water

The Cedar Mountains WSA forms part of a divide for two surface water drainage basins; the Mimbres Basin to the northeast and the Wamel Basin to the southwest. Both are noncontributing, closed basins.

Principal ephemeral streams within the WSA that drain into the Wamel Basin are Rock Hole Canyon and Wamel Draw. Rock Hole Canyon becomes indistinct along the lower alluvial fan slopes and follows a shallow course southwestward. Wamel Draw retains a more distinct channel that becomes broad as it heads south into Mexico. Gap Draw, along with several small tributaries, is the principal ephemeral stream that drains into the Mimbres Basin from the WSA. The drainage heads northwest and flattens out into a broad channel past Gap Hill. Surface flows of the ephemeral streams generally occur as a result of summer thundershowers.

Information on ground water in the WSA is limited. General direction of ground water movement is to the southwest in the Wamel Basin and to the northeast in the Mimbres Basin. Ground water is obtained primarily from the permeable sediments of the valley fill and is within recommended limits for livestock and wildlife use as established by the National Academy of Sciences (BLM 1980).

#### C. Soils

Soils of the Cedar Mountains WSA were derived primarily from igneous parent bedrock types. Three major soil types occur within the WSA depending on the particular landform on which they are found. The most prevalent soil type occurs on hills where slopes range from 10 to 75 percent. The soils are shallow and stony over bedrock. On the creosote covered "bajada", the soils are deeper. They have a gravelly surface and are usually high in calcium carbonates (caliche). In small drainageways and valleys between hills, the soils receive runoff water and usually support good stands of tobosa grass.

#### D. Vegetation

##### 1. General

The vegetation and associated range sites within the Cedar Mountains WSA consist of four major types:



Vegetation Type	Range Site	Federal Acres
Mixed mountain shrub	Mountains	6,099
Creosote	Gravelly	7,599
Tobosa	Draws (swales)	1,206
Mixed mountain shrub	Gravelly sand	7

Mixed mountain shrub and tree species in the Cedar Mountains include juniper, hackberry, Apacheplume, snakeweed, fourwing saltbush, tarbush, mesquite, and Mormon tea. Associated grass species are tobosa, black grama, other gramas, and bush muhly.

Creosote gravelly areas surround the mountain region. Vegetation is predominantly shrubs with a few grass species. Other associated shrub species are snakeweed, mariola, tarbush, mesquite, allthorn, and yucca. Grass species include tobosa, black grama, fluffgrass, bush muhly, and burro grass.

Tobosa and burro grass are the dominant species in the draw (swale) sites. Invading shrub species are tarbush, mesquite, and allthorn. Other shrub species include Mormon tea and yucca.

Oak brush, sumac, juniper, agave, and cacti are the most prevalent woody species in the sandy arroyos of the mountain canyons. Tobosa grass is also present. This area was identified as special habitat for wildlife.

## 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

## E. Wildlife

Most of the Cedar Mountains WSA is a grass mountain habitat site with some creosote at the edges. In some areas, there are shrubs and juniper trees which make for more variation in the habitat. There are also



## CEDAR MOUNTAINS

some cliffs and rimrock, and some raptors probably nest in the WSA. It is not a unique area for wildlife since it is quite similar to other desert ranges.

The New Mexico Department of Game and Fish has delineated the Cedar Mountains as a deer herd unit area. They estimate that there are now less than half a deer per section and optimum numbers are half a deer per section. Some javelina also are found in the WSA.

### F. Visual

The Cedar Mountains have a Class B (moderate) scenic quality rating. The landform of the Cedar Mountains consists of rolling, conical hills. Colors are dark shades of reddish brown and gray with a grainy-crumbly texture. Vegetation consists of light brown and yellow grasses spotted with dark green juniper and desert shrubs.

The WSA is within a Visual Resource Management Class II area.

### G. Cultural

There is a large Animas phase pueblo in the Cedar Mountains WSA which has been partially destroyed through bulldozing; however, a similar site remains almost undisturbed. Because almost none of this WSA has been surveyed, it is difficult to evaluate the significance of the cultural resources in this area. The known sites have a high degree of significance because of their condition, the rarity of Animas phase sites, and the large amount of scientific information contained in them. These sites would probably be eligible for the National Register of Historic Places.

### H. Air

Generally, the quality of air within the Cedar Mountains WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

The locations of land under mineral leases are shown on Map 25-2.

##### 1. Energy Minerals (Oil and Gas)

As of December 1, 1984, there were 43 post-Federal Land Policy and Management Act (FLPMA) oil and gas leases in the WSA.

The Cedar Mountains lie within the Florida shelf area along the northeast margin of the Pedregosa Basin. The Pedregosa Basin is a highly favorable area for wildcat oil and gas exploration. Potentially good petroleum source and reservoir rocks are present in the thick Paleozoic section in this area of southwestern New Mexico. There have been no oil and gas wells drilled in the vicinity of the WSA. Most of the wells have been drilled southwest of the Cedar Mountains nearer the deeper portions of the Pedregosa Basin. Paleozoic rocks do crop out in several areas in the Cedar Mountains and may be present at depth below the volcanics. However, adjacent pediment and basin areas outside the WSA are more favorable for oil and gas occurrences. The WSA is classified as having low potential for oil and gas resources.

##### 2. Nonenergy Minerals (Base and Precious Metals)

As of September 17, 1984, there were no mining claims recorded with BLM in the WSA.

There are no known metallic mineral occurrences in the Cedar Mountains. Within the WSA, volcanics in contact with Paleozoic rocks and the occurrence of post-volcanic faults indicate that the geologic environment may be favorable for mineral occurrences. Without more positive geologic indicators, the WSA has to be classified as having low potential for base and precious metals mineral resources.





#### MINERAL RESOURCES POTENTIAL OF THE CEDAR MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Oil and Gas	Tertiary volcanics; possible Paleozoic rocks at depth	Low	--
Nonenergy Minerals			
Base and Precious Metals	Tertiary volcanics in contact with Paleozoic rocks; post-volcanic faults	Low	--


Note: \*Acreage was not calculated for areas with low potential.



**CEDAR MOUNTAINS WSA (NM-030-042)**  
Proposed Action--No Action/No Wilderness Alternative

 **WSA Boundary**  
 **BLM**  
 **Private**  
 **State**

MAP 25-2  
MINING CLAIMS AND MINERAL LEASES\*

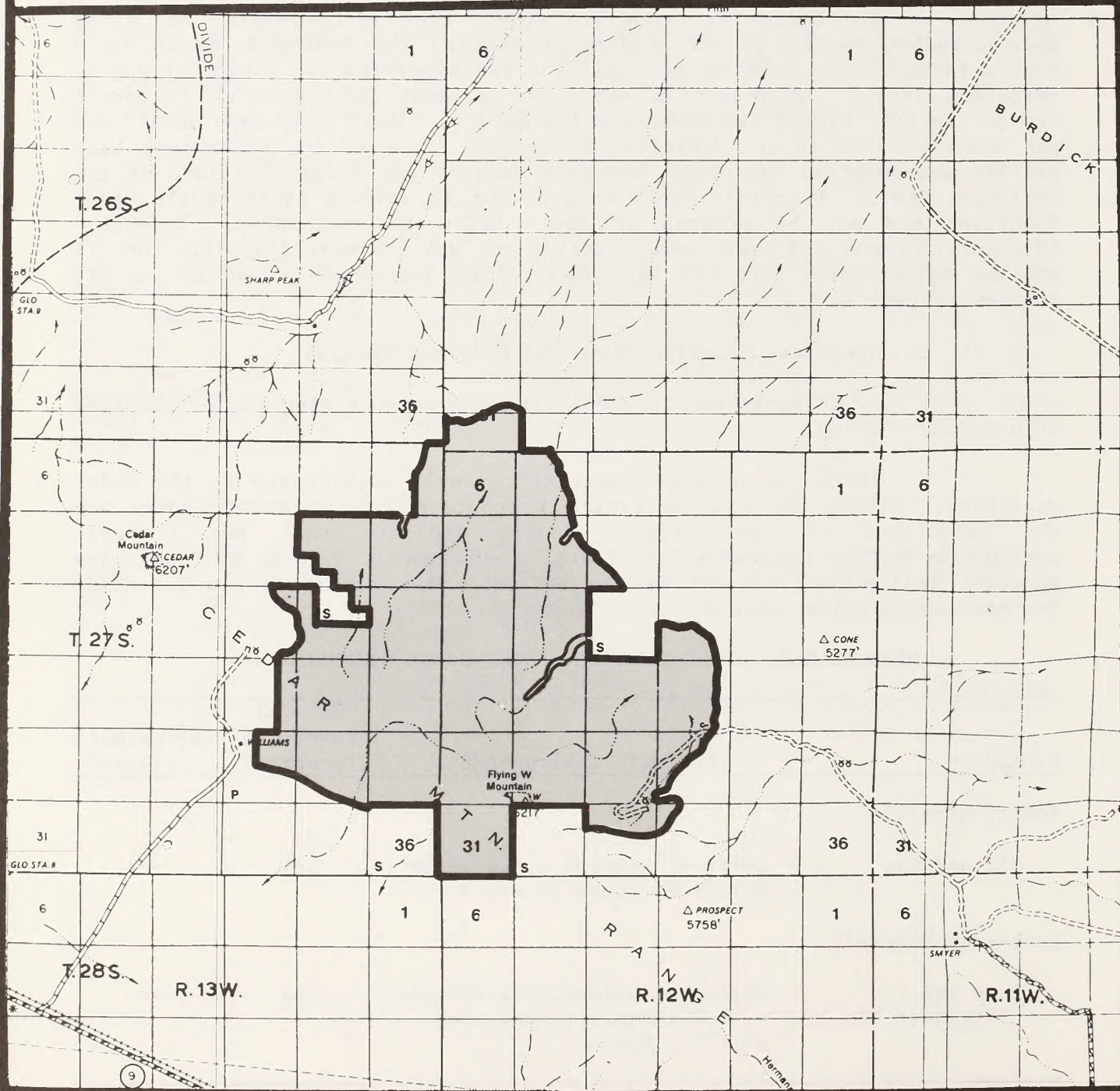
 Post-FLPMA Oil and Gas leases

FLPMA was passed October 21, 1976.

\*No mining claims were recorded with the BLM within the WSA as of September 17, 1984.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District,  
January 1985.





## B. Watershed

Within the Cedar Mountains WSA, water is used primarily by livestock and wildlife. Water developments that are within the WSA boundary include one dirt tank on a small ephemeral stream and one water spreader system on Gap Draw (see Chapter III, Livestock Grazing). Additionally, several well facilities and dirt tanks are located just outside the WSA boundary that are for livestock watering.

A portion of the Cedar Mountains WSA is within the Mimbres Valley declared underground water basin and ground water use is administered by the New Mexico State Engineer.

## C. Livestock Grazing

## 1. Allotments

Parts of five grazing allotments are within the Cedar Mountains WSA. Some areas within the Cedar Mountain WSA are inaccessible to livestock due to the steep mountain slopes and distance from water developments. Licensed grazing use on public land includes cattle and a few horses. Three allotments, Burdick Hills (2013), Mashed O (2034), and Smyer (2046), are under implemented Allotment Management Plans (AMPs).

ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Z. Clopton 2006	45,115	7,788	214	.5%
Burdick Hills 2013	78,498	12,202	5,606	7%
Flying W Ranch 2017	20,917	3,612	4,134	20%
Mashed O 2034	70,340	12,228	4,187	6%
W. and M. Smyer 2046	13,511	2,364	770	6%
TOTAL			14,911	

## 2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
Flying W Ranch 2017	interior fence	$\frac{3}{4}$ mile
Mashed O 2034	water spreader dirt tank	T. 27 S., R. 12 W., Sec. 22 T. 27 S., R. 12 W., Sec. 20



## CEDAR MOUNTAINS

### Boundary Fences:

Clopton 2006 and Flying W Ranch 2017	1 miles
Mashed O 2034 and Burdick Hills 2013	3 miles
Mashed O 2034 and Flying W Ranch 2017	2 miles
Flying W Ranch 2017 and Burdick Hills 2013	2 miles
Mashed O 2034 and Smyer 2046	2 miles

Note: a/Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

### 3. Potential Rangeland Developments

The Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (BLM 1983) on energy minerals leasing and rangeland management proposes a  $\frac{1}{2}$  mile of pipeline on the Smyer allotment (2046) in T. 27 S., R. 12 W., Sections 28 and 33. The location of the proposed rangeland development is tentative. The purpose of the proposed pipeline is not to accommodate increased livestock numbers, but to redistribute grazing use over the Smyer allotment and relieve grazing pressure around existing livestock waters. The rangeland condition on presently heavily grazed areas of the allotment would show improvement in the long-term.

#### D. Recreation

The predominant recreation use of the WSA is hunting for deer, dove, quail, and javelina. There is probably a certain amount of driving for pleasure and sightseeing around the WSA. Primitive recreation opportunities are discussed in Chapter IV, Primitive and Unconfined Recreation.

#### E. Realty Actions

A temporary State Aid Withdrawal was located within the Cedar Mountains WSA. The State of New Mexico completed their land selection and the withdrawal was reviewed by the BLM. The withdrawal was revoked effective October 7, 1983.

#### F. Wildlife

One quail guzzler is located in the Cedar Mountains WSA in T. 27 S., R. 12 W., Section 27, NE $\frac{1}{4}$ NW $\frac{1}{4}$ .



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

###### a. Naturalness

The Cedar Mountains WSA generally appears natural. Imprints of man associated with the WSA include: 7 vehicle trails, approximately 10 miles of fences, 2 cherry-stemmed windmills, and a cherry-stemmed road and pipeline.

Approximately 10 miles of the seven vehicle trails are within the WSA boundary in the northwest, southwest, and east parts of the WSA. They generally follow drainages and are topographically screened. Both the vehicle trails and fences have insignificant impacts on naturalness.

Both of the windmills are cherry-stemmed less than  $\frac{1}{4}$  mile into the WSA. Due to their locations just outside the boundaries of the WSA, they are substantially unnoticeable. In addition, the windmill just outside the northeast boundary is located on the north side of a hill and as a result, is topographically screened from most of the WSA.

A cherry-stemmed road and pipeline protrude about 1 mile into the east side of the WSA. This rangeland development impacts naturalness locally, but does not negatively impact the naturalness of the entire WSA.

###### b. Solitude

The Cedar Mountains WSA contains outstanding opportunities for solitude. The numerous small canyons provide topographic screening in the mountainous portion of the WSA. In the northern part of the WSA, great sweeping vistas of rolling, grass covered hills enhance the feeling of solitude and remoteness from others.

###### c. Primitive and Unconfined Recreation

Primitive recreation opportunities in the Cedar Mountains WSA include hunting, hiking, and backpacking. There are few rockclimbing opportunities and horseback riding is somewhat limited due to the grazing allotment boundary fences within the WSA. Opportunities for backpacking are limited by the size of the WSA. During the intensive inventory phase of the wilderness review, opportunities for primitive recreation were judged as not being outstanding either in terms of diversity or quality of the recreation experiences available in the WSA.

##### 2. Special Features

The Cedar Mountains WSA contains special ecological and cultural features of scientific and educational value. The Cedar Mountains



## CEDAR MOUNTAINS

WSA provides habitat for the night blooming cereus, a Bureau sensitive plant species proposed for Federal listing and southwestern barrel cactus, a plant species selected by the New Mexico State Heritage Program as a special concern element (see Chapter II, Vegetation). The cultural features of this area consist of Animas phase sites that would probably be eligible for the National Register of Historic Places (see Chapter II, Cultural).

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Cedar Mountains WSA as being in the Chihuahuan Desert Province. The potential natural vegetation is grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
mountain mahogany oak scrub	6,106
creosote	7,599
grama-tobosa shrubsteppe	1,206

#### b. Distance From Population Centers

The Cedar Mountains WSA is approximately 3 hours driving time from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from El Paso, Texas; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.

### B. Manageability

Two factors complicate the ability of the Cedar Mountains to be managed as wilderness: land status and the cherry-stemmed road and pipeline southwest of Bob's Tank in T. 27 S., R. 12 W., Section 20. However, both of these factors are minor problems.

The State land adjacent to the northwest boundary is surrounded by the WSA on the north, east, and south. State land also borders the WSA on the southwest and southeast. Nonconforming or nonwilderness uses on the State land could degrade wilderness values in the the WSA. Should the area



be designated wilderness, acquisition of the State land legally described below should be considered to enhance the manageability of the area as wilderness.

<u>Legal Description</u>	<u>Acres</u>
State Land	
T. 27 S., R. 12 W., Section 32: All	640
T. 27 S., R. 13 W., Section 11: W $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$	120
Section 14: SE $\frac{1}{4}$ NE $\frac{1}{4}$ , W $\frac{1}{2}$ NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$	200
Section 36: All	640
TOTAL	1,600

Continued vehicle use on the cherry-stemmed road past Bob's Tank could create impacts on the naturalness and solitude in the east-central part of the WSA.

Since these are minor manageability conflicts, the Cedar Mountains WSA could be managed to preserve its existing wilderness character.



## V. CONSULTATION AND COORDINATION

### A. Public Involvement Overview

Numerous public inputs were received on the Cedar Mountains WSA during the public comment periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). The recommendation for the Cedar Mountains in the March 1980 WSA Proposals was among the ten most commented-on recommendations in the State. Maps of existing rangeland developments and proposed WSA boundaries and photographs were submitted with some of the comments.

In the March 1980 WSA Proposals, the BLM proposed to drop the entire Cedar Mountains intensive inventory unit. However, after the start of the public comment period, discrepancies were discovered in the intensive inventory information on the WSA. Due to these discrepancies, a major reevaluation of the area's wilderness characteristics was necessary prior to making a final WSA decision. Four roadless areas greater than 5,000 acres were identified in the reevaluation of the original intensive inventory unit.

During the reevaluation of this area, grazing permittees and other members of the public were concerned about the accuracy of the inventory data. Field trips made in conjunction with the permittees and interested individuals are documented in the Permanent Documentation File in the Las Cruces District Office.

Many of the comments on the WSA Proposals opposed WSA status for the Cedar Mountains. The commentators were upset that the area was being reevaluated for wilderness characteristics. Opposing comments cited rangeland developments, lack of outstanding opportunities for solitude or recreation, and conflicts with the ranching business and rockhounds. Comments favoring WSA status for this area stated that a portion of the unit has basic wilderness values and cited the supplemental values of a biological ecotone along the Mexican border.

After consideration of public comments and the corrected intensive inventory data, the BLM designated part of one of the four roadless areas a WSA (16,680 acres) in the November 1980 New Mexico Wilderness Study Area Decisions. The remaining three roadless areas were released from further wilderness review. The BLM's November 1980 decision to release the roadless area west of the WSA and an area contiguous to the designated WSA was subsequently protested by the Desert Wilderness Coalition. The State Director denied the protest and the Desert Wilderness Coalition appealed to the Interior Board of Land Appeals (IBLA). In their decision of December 5, 1983 (IBLA-81-1068), the IBLA affirmed the decision dropping the roadless area to the west, but directed BLM to reconsider including within the designated WSA the contiguous acreage south of the WSA and north of State Highway 9.

The BLM's November 1980 decision designating the 16,680-acre WSA was also protested by Zay Clopton, a grazing permittee in the area.



Mr. Clopton protested the inclusion of approximately 1,900 acres in T. 28 S., R. 12 W., Sections 5, 6, 7, and 8, and T. 28 S., R. 13 W., Sections 12 and 13, in the WSA. The State Director resolved Mr. Clopton's protest by relocating the southern boundary of the WSA on the section line between T. 27 S., R. 12 W., Section 31, and T. 28 S., R. 12 W., Section 6.

The information regarding the boundary change as a result of Mr. Clopton's protest was not transmitted to the IBLA. As a result, the area specified by the IBLA for reconsideration and possible addition to the WSA was not contiguous to the designated WSA. The WSA and area described by the IBLA only shared a common section corner. In response to IBLA's ruling, BLM reinventoried all contiguous roadless acreage of the presently designated WSA. The reinventory indicated that the area does not meet the requisite wilderness characteristics and the acreage was released from further review by the State Director.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983), 25 personal inputs were received on the Cedar Mountains WSA. Most of these inputs favored wilderness designation of the area. Comments favoring wilderness designation fell into 3 major categories of criticism of BLM's evaluation of the area: (1) wilderness values; (2) manageability; and (3) ecological values.

Most of the comments listed the area's wilderness values as reasons for favoring wilderness designation for the area. Several comments indicated support for wilderness designation of an area greater than the 14,911-acre WSA. The acreage figures cited ranged from 40,000 to 95,000 acres. In addition to the general comment that the Cedar Mountains WSA is manageable as wilderness, several commentators suggested solutions to manageability conflicts such as land exchanges for contiguous State land, adopting a long-term plan for eliminating existing fences, and closure of cherry-stemmed roads.

Comments submitted by the State of New Mexico Natural Resources Department (NMNRD) indicated inadequacies in the plant data presented in the Wilderness Analysis Report (WAR) and listed a number of State sensitive and Federal candidate plant species possibly occurring in the WSA. The NMNRD's comments also indicated that there is a high probability of finding Mexican peripheral plant species and communities in the WSA as well as peripheral animal species from Mexico.

Comments opposing wilderness designation for the area either indicated agreement with the BLM's assessment and proposed action for the WSA or listed potential mineral resources as the reason for opposing wilderness designation.

#### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of



## CEDAR MOUNTAINS

the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to minerals, water, soils, vegetation, wildlife, visual, cultural, air, recreation, and realty actions are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.

### SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Amended Boundary	An Amended Boundary Alternative was not analyzed because resource conflicts are not significant and potential boundary adjustments that might better resolve manageability conflicts were not identified.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Livestock Grazing	No significant impacts were identified for livestock grazing; however, this issue will be discussed because of Statewide interest.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Action/ No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

### Issues Selected for Detailed Analysis

The primary issue identified for this WSA is the quality of the area's wilderness values. The impacts of the land status patterns surrounding the WSA and vehicle use on cherry-stemmed roads are identified as factors affecting the lesser issue of the area's manageability.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 14,911 acres of public land within the Cedar Mountains WSA would be recommended suitable for wilderness designation. (See Map 25-1 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the BLM's Wilderness Management Policy (1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the existing wilderness values of the area with significant long-term Congressional protection. The area would be specifically managed to maintain its natural appearance, outstanding opportunities for solitude, and special ecological and cultural features.

Two factors could slightly impact the ability of the Cedar Mountains WSA to be managed as wilderness. Nonwilderness uses on the State land adjacent to the boundaries of the WSA could degrade natural values and opportunities for solitude. However, under this alternative, attempts would be made to acquire approximately 1,600 acres of State land adjacent to the area to enhance manageability. Vehicle use on the cherry-stemmed road in the east-central part of the WSA could also degrade naturalness and opportunities for solitude.

#### 2. Impacts to Livestock Grazing

Generally, motorized access on the 10 miles of existing vehicle trails within the designated wilderness would not be permitted. However, if there were no practical alternatives, a permit for vehicular access along 2 miles of existing vehicle trail for maintenance of the boundary fence between the Burdick Hills (2013) and Mashed O (2034) allotments could be authorized.

If it were determined to be necessary for protection of rangeland or wilderness resources, and there were no practical alternatives, the proposed  $\frac{1}{2}$  mile of pipeline on the Smyer allotment (2046) could be constructed using motorized equipment. No access road would be constructed and vehicular access for maintenance purposes would not be authorized.

Overall, impacts to livestock operators would be insignificant and would consist primarily of minor inconveniences due to restricted vehicular access.



## CEDAR MOUNTAINS

### B. No Action/No Wilderness (Proposed Action)

Under the No Action/No Wilderness Alternative, the entire 14,911 acres of public land within the Cedar Mountains WSA would be recommended unsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

#### 1. Impacts to Wilderness Values

Under the No Action/No Wilderness Alternative, the natural values, outstanding opportunities for solitude, and special ecological and cultural features of the Cedar Mountains WSA would not be provided with long-term Congressional protection. Since existing and proposed BLM plans do not identify any activities which would impair wilderness values, the entire Cedar Mountains WSA would probably retain its natural character in the short-term. However, management of the area as specified in land use plans would be subject to administrative change and the impacts to wilderness values could be significant in the long-term.

#### 2. Impacts to Livestock Grazing

Motorized vehicles and equipment could be utilized as needed for livestock management. The proposed pipeline on the Smyer allotment (2046) could be constructed with an access road. The development could be checked and maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing under this alternative.



## APPENDIX 26

### COOKE'S RANGE WSA (NM-030-031)

#### I. GENERAL DESCRIPTION

##### A. Location

The Cooke's Range Wilderness Study Area (WSA) is located in Luna County, approximately 15 miles north of Deming, New Mexico.

The following U.S. Geological Survey (USGS) topographic maps cover the WSA:

Dwyer, New Mexico	15-minute scale
Lake Valley, New Mexico	15-minute scale
Goat Ridge, New Mexico	7½-minute scale
Massacre Peak, New Mexico	7½-minute scale

##### B. Climate and Topography

The Cooke's Range WSA is characterized by an arid, continental climate. Annual precipitation totals average between 8 and 10 inches, with 12 to 14 inches at elevations greater than 6,000 feet. Over 50 percent of the total occurs from July through September in high intensity, short duration thundershowers.

Temperatures reach a maximum in July with average afternoon temperatures reaching the mid-90's at lower elevations. Afternoon highs in the 80's are more common at higher elevations. Minimum temperatures during the winter months range from the mid-20's to near freezing.

Surface winds are predominantly from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The terrain of the Cooke's Range plays a very important role in the microclimates of different parts of the range. Temperatures generally decrease with elevation. However, the aspect of a location, whether it is a north or south facing slope, also contributes in defining temperature, particularly in terms of its daily and annual range.

Cooke's Peak rises over 3,600 feet above the surrounding plains and dominates the landscape for miles around. Portions of the north and east slopes of Cooke's Peak are within the boundaries of the WSA; however, much of the south and southwest slopes are on cherry-stemmed State and private lands. Several ridges, rising between 1,000 and 3,000 feet above the surrounding terrain, run the length of the WSA. These ridges, which form the backbone of the range, are dissected by dozens of drainages and



## COOKE'S RANGE

secondary ridges. Several steep walled canyons and dropoffs are located in the WSA.

### C. Land Status

The WSA contains 19,608 acres of public land and 640 acres of State inholdings. Four hundred eighty acres of private land and 1,440 acres of State land are cherry-stemmed out of the WSA. The subsurface mineral estate of the cherry-stemmed 480 acres of private land in and around Provinger Canyon is Federally-owned. (See Map 26-1 for land status within the WSA boundary.)

### D. Access

Legal access to the Cooke's Range WSA is available on the east, west, and southwest boundaries. Legal access on the east side is by way of the Hadley Draw road (County Road A019), which leads north off State Highway 26 at Florida, approximately 12 miles northeast of Deming. The county maintained road terminates approximately 3 miles southeast of the ghost town of Cooke's. From there, a four-wheel drive road provides additional physical access as it continues on to Cooke's and on around the north boundary through Hurricane Pass.

County Road A008 runs due north from U.S. Highway 84 just north of Deming and forms approximately 4 miles of the western boundary of the WSA. County Road A016 branches off of A008 to the east-southeast and forms approximately 3 miles of the southwest boundary of the WSA.



# COOKE'S RANGE WSA (NM-030-031)

PROPOSED ACTION--NO ACTION/NO WILDERNESS ALTERNATIVE

— WSA Boundary

■ BLM

□ Private

□ State

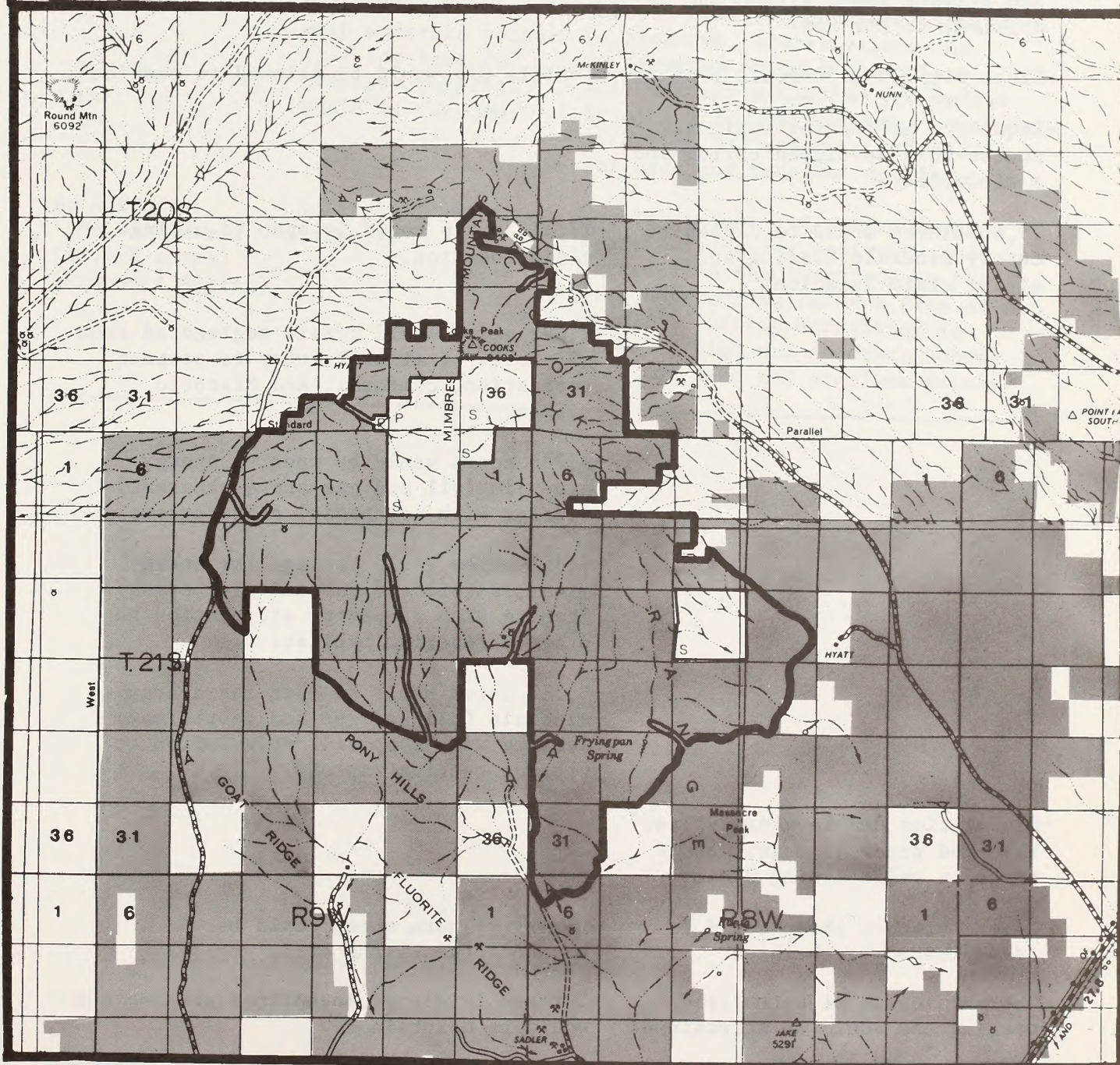
State and private ownership is identified only inside the WSA boundary.

SCALE: 1/2 inch=1 mile

SOURCE: USDI BLM, Las Cruces District, January 1985

MAP 26-1

LAND STATUS





E. Proposed Action, Alternatives, and Issues

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Action/No Wilderness (Proposed Action)
°Manage 19,608 acres as wilderness.	°Manage 19,608 acres without wilderness protection.
-Attempts would be made to acquire 3,000 acres of State and private lands within and adjacent to the WSA.	-No special attempts would be made to acquire State and private lands.
-Close 8 miles of vehicle trails.	-Vehicle use would be allowed to continue.
-Require a permit for vehicular access to a developed spring and a windmill.	
-19,608 acres would be closed to energy minerals leasing and mining claim location.	-17,115 acres would be open to mining claim location.
	-2,493 acres would remain segregated from all forms of mineral entry to protect recreation, cultural, and historic values.
	-9,745 acres would be open to energy minerals (oil and gas and geothermal) leasing with no special stipulations.
	-1,350 acres would be open for energy minerals (oil and gas and geothermal) leasing with a special stipulation to protect riparian habitat.
	-8,513 acres would be open for energy minerals (oil and gas and geothermal) leasing with a special stipulation to protect nesting raptors.
-Exploration and development for base and precious metals could occur on valid mining claims.	
-Desert bighorn sheep could be transplanted in the area.	-Desert bighorn sheep could be transplanted in the area.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues	
	Locatable (Metallic)	
	Minerals Exploration and Development	Wilderness Values
All Wilderness (19,608 acres)	Opportunity to explore and locate mining claims in a 1,100-acre area with high potential and a 3,700-acre area with moderate potential for base and precious metals would be forgone.	Existing wilderness values and special ecological, cultural, and scenic features would have long-term Congressional protection. However, the area surrounding Cooke's Peak could not be managed to preserve natural values and outstanding opportunities for solitude and primitive recreation if mining activities occur in areas with high and moderate potential for base and precious metals.
No Action/ No Wilderness (19,608 acres) (Proposed Action)	No significant impacts.	Natural values and outstanding opportunities for solitude could be degraded in the long-term in the area surrounding Cooke's Peak as a result of mining activities in areas of high and moderate potential for base and precious metals.



## II. EXISTING RESOURCES

### A. Geology

Cooke's Range, the southernmost extension of the Mimbres Mountains, is an uplifted fault block consisting of Paleozoic and Mesozoic sediments intruded by a large granodiorite stock. Approximately 3,000 feet of Paleozoic and Mesozoic sediments have been measured in Cooke's Range including the Ordovician El Paso and Montoya groups, the Silurian Fusselman dolomite, the Devonian Percha shale, the Mississippian Lake Valley formation, the Pennsylvanian Magdalena group, and the Cretaceous Lobo, Sarten, and Colorado formations. Tertiary andesites and tuffs are evident east of the WSA boundary.

Large scale folding, faulting, uplift, and intrusion began in the late Cretaceous or early Tertiary periods. The Cooke's Peak stock was probably emplaced prior to the eruption of Tertiary volcanics which crop out to the east of the WSA in the Old Hadley Mining District. Varying amounts of tectonic activity continued throughout a large part of the Tertiary period.

During emplacement of the Cooke's Peak stock, the overlying sedimentary rocks were faulted and slightly domed. Cooke's Range is bound on the east by the Sarten Fault, which forms the east boundary of the main area of ore deposition within the Cooke's Peak Mining District. Minor faulting is common throughout the Cooke's Range.

### B. Water

The Cooke's Range WSA is situated within the northeast portion of the Mimbres Basin, a noncontributing, closed basin.

Surface water within the WSA drains into the Mimbres Basin through an ephemeral stream system. Principal drainages in and around the Cooke's Range include Provinger Canyon to the southwest; Hadley Draw, OK, and Rattlesnake Canyons to the southeast; and Starvation and Butterfield Draws to the south. These ephemeral streams flatten out below the alluvial fan slopes and become a nonintegrated system of washes and arroyos in the valley floor. Surface flow generally occurs as a result of intense summer precipitation. There are several scattered springs in the WSA; however, their contribution to surface flow is limited. One spring in the upper reach of Hadley Draw is particularly important for its contribution to the riparian habitat. Although the spring and riparian habitat are outside the WSA boundary, they are near enough to have an influence on the WSA.

Ground water is available primarily from the alluvial deposits in the draws. Little potential exists in the higher elevations underlain by granite and intrusive rocks. Ground water movement from the east side of the WSA is to the southeast, and from the west the water follows the Mimbres trough to the southwest. The ground water reservoir is recharged mainly during flood runoff by infiltration in stream channels. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).



### C. Soils

The soils of the Cooke's Range WSA were derived from a variety of parent rock types. Three major soil types occur within the WSA dependent on the particular landform on which they are found. The most prevalent soil type occurs on steep hillsides where soils are shallow and stony. Exposed bedrock outcropping is common. Deeper, cobbly soils occur on alluvial fans and creosote covered footslopes around the mountains. Soils in the small drainageways and valleys between the mountains are typically deep and fine textured.

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Cooke's Range WSA consist of five major types:

Vegetation Type	Range Site	Federal Acres
Pinyon-juniper- mixed mountain shrub	Mountain	13,899
Creosote	Gravelly areas	3,068
Tobosa	Draws (swales)	879
Mixed desert shrub	Sandy areas	1,702
Mixed desert shrub	Gravelly sand	60

Pinyon-juniper is the dominant vegetation type in the higher mountain elevations of the Cooke's Range. The vegetation species in the mountains are many and diverse. Other shrub species include oak, mountain mahogany, sotol, Wright silktassel, pale wolfberry, ocotillo, spicebush, Fendlerbush, snakeweed, creosote, mesquite, tarbush, yucca, and brickelbush. Associated grass species include gramas, muhlys, vine-mesquite, cane bluestem, tobosa, and threeawns.

Creosote gravelly areas surround the mountain region. Other tree and shrub species which characterize these areas are snakeweed, mesquite, mariola, yucca, oak, juniper, tarbush, mimosa, range ratany, and pale wolfberry. Grass species include cane bluestem, gramas, tobosa, threeawns, fluffgrass, and bush muhly.

Tobosa draws occur in the southern portion of the WSA. Other associated grass species are bush muhly, alkali sacaton, and burro grass. Shrub species include pale wolfberry, creosote, tarbush, yucca, mesquite, fourwing saltbush, and snakeweed.

Mixed desert shrubs are the dominant vegetation type on the sandy areas in this WSA. They occur on the southwest side of the mountain range. Shrub species include snakeweed, yucca, Mormon tea, mariola, cacti,



## COOKE'S RANGE

mesquite, creosote, and tarbush. Of the few grass species present, gramas, fluffgrass, and bush muhly are the most prevalent.

The gravelly sand range site is in a sandy arroyo in Frying Pan Canyon. This site is a pseudoriparian area that was identified as special habitat for wildlife. Shrub species include creosote, tarbush, mesquite, snakeweed, yucca, and cacti. Grass species include bush muhly, fluffgrass, and tobosa.

### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus  
Status: Bureau sensitive species proposed for Federal listing.  
Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Cupressus arizonica - Arizona cypress  
Status: Selected by the New Mexico State Heritage Program as a special concern element. A small stand of these trees occur approximately 1 mile north of the WSA boundary. This is the only known native population in New Mexico.  
Habitat: Scattered to dense stands straddling ridge and downsides. Mixed with pinyon and juniper.

Species: Ferocactus wislizenii - southwestern barrel cactus  
Status: Selected by New Mexico State Heritage Program as a special concern element.  
Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

Species: Penstemon dasyphyllus  
Status: Selected by the New Mexico State Heritage Program as a special concern element. This plant occurs approximately  $\frac{1}{2}$  mile from the southeast boundary of the WSA.  
Habitat: Scattered on gravelly slopes in desert grassland.

Species: Penstemon lanceolatus  
Status: Selected by the New Mexico State Heritage Program as a special concern element. This plant occurs approximately 1 mile north of the WSA boundary.  
Habitat: Scattered on southwest facing slopes under mountain mahogany and oak and in open areas under various grasses.

Species: Scrophularia macrantha - red figwort  
Status: Federal endangered. This plant occurs approximately 1 mile north of the WSA boundary.  
Habitat: Among rock debris in cliff area; among pinyon-juniper, Arizona cypress, and ash species in wet spots.



Species: Silene wrightii - Wright's catchfly

Status: Selected by the New Mexico State Heritage Program as a special concern element. This plant occurs approximately 1 mile north of the WSA boundary.

Habitat: Found on sandstone ledges facing north at top of ridge. Associated with Scrophularia macrantha, Halimolobus diffusus, Selaginella, and Phacelia rupestris.

#### E. Wildlife

The Cooke's Range WSA has a diversity of habitat sites. Most of the area consists of mountain sites--mixed shrub, grass, or pinyon-juniper grass with smaller sites that are classified as oak draw, creosote, and pseudoriparian. In addition, there is a small riparian habitat site just outside the northeast boundary. It is close enough to have an effect on wildlife within the WSA. There are also springs in the WSA which provide water for wildlife.

Another valuable habitat feature is the cliffs in the higher elevations. There is evidence of golden eagle nesting in these cliffs.

The variety of vegetation in the Cooke's Range WSA results in a diverse wildlife community. There is an abundant avifauna, with 70 species recorded in 6 days field work by the BLM Integrated Habitat Inventory Classification System (IHICS) team (1981). Besides the golden eagle, several other raptors nest in or near the WSA: the red-tailed hawk, the Cooper's hawk, the great horned owl, and the prairie falcon (BLM 1981).

There are some mule deer in the range. Although the habitat is good, the herd is fairly small. There are approximately 2.5 animals per square mile. New Mexico Department of Game and Fish (NMDGF) estimates five deer per square mile to be the optimum number.

Some reptiles of scientific interest were collected during the BLM wildlife survey. An unusual lizard, the Gila whiptail was found. This species was previously known only from the Gila Basin (Behler 1979). A hybrid whiptail, New Mexican whiptail x little striped whiptail also was identified. The New Mexican whiptail, a parthenogenic species, can reproduce asexually, while the little striped whiptail reproduces sexually. These two species had not been known to hybridize, and the fact that one is parthenogenic makes this even more uncommon (Price 1982; Hakkila 1982). Hybrid lizard species often develop to take advantage of a disturbed habitat. Cole (1978) discusses a hybrid whiptail which developed in Arizona where the habitat had changed from a grassland to a desert type. This suggests that hybrids such as the one collected in the WSA may be an indicator of vegetation changes.

#### F. Visual

The northern part of the WSA is composed of a craggy mountain with some tilted banded rock exposed. The range of colors exposed in the mountains includes yellow gray to mottled grays and reds. Texture is



## COOKE'S RANGE

coarse. South of this extremely rugged section, the WSA becomes less precipitous with more rolling and open hills cut by somewhat deep canyons. Vegetation is generally composed of patchy clumps of trees and shrubs which often follow rock stratifications or drainages.

The Cooke's Range WSA has a Class A (high) scenic rating and high scarcity rating. The range can be seen from Interstate 10, U.S. 180, Deming, City of Rocks State Park, and Deming's Centennial Park. The WSA is within a Visual Resource Management (VRM) Class II area.

### G. Cultural

One of the most significant petroglyph sites west of the Rio Grande in the Las Cruces District is located near Frying Pan Spring in the southeast part of the Cooke's Range WSA. The Mogollon style designs include crosses, abstracts, masks, lizards, a plumed serpent, and birds. These petroglyphs provide information regarding prehistoric art styles and beliefs. The Frying Pan Spring area contains at least one lithic site. A four room Classic Mimbres site located in the western portion of the WSA could provide significant information regarding Mimbres sites in an environmental zone in which they usually do not occur.

The historical component of this WSA is probably the most significant of all the WSAs in the Las Cruces District. The Butterfield Trail forms the southeast boundary of the WSA. The Trail was one of the most significant migration and communications routes in the west, with use of the area starting in 1846. Beginning in 1863, military patrols from Fort Cummings (the most significant Indian Wars fort in New Mexico),  $\frac{1}{2}$  mile east of the WSA, scoured the area in search of hostile Indians. In 1882, the mining town of Cooke's was established along what is now the northeast boundary of the WSA. Between 1882 and 1914, about 1,500,000 pounds of lead and 6,000 ounces of silver were removed from the mines, making Cooke's one of the best lead producing areas in New Mexico. At least 100 individuals occupied the town. The total value of the production was about \$4,000,000 until 1927 (Anderson 1957).

### H. Air

Generally, the quality of air within the Cooke's Range WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

The mineral resources potential of the WSA is shown on Map 26-2. Approximate locations of mining claims are shown on Map 26-3.

##### 1. Energy Minerals (Uranium)

Approximately 216 acres of the Massacre Peak Petroglyph Area (total of 240 acres) and 2,277 acres of the Fort Cummings Recreation Area (total 5,999 acres) are within the WSA. These areas were classified for recreation and historic purposes under the Classification and Multiple Use Act of 1964 and are presently segregated from all forms of mineral entry. Two areas within the WSA are covered by special stipulations for energy minerals leasing (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983). These stipulations apply to the leasable energy minerals, oil and gas and geothermal. The Hadley Draw Riparian Area is totally within the boundaries of the WSA. Energy minerals leases within this 1,350-acre area are subject to a protective stipulation for threatened or endangered wildlife species associated with the area's riparian habitat. This stipulation could limit surface use and occupancy. Portions (8,513 acres) of the Cooke's Range Wildlife Area (total 11,645 acres) are also within the WSA. This area is covered by a protective stipulation for nesting raptors which allows surface disturbing activities only from August 1 through January 31. As of December 1, 1984, there were no mineral leases within the WSA.

Uranium occurs in a fluorite vein in limestone approximately 2 miles north of the WSA in T. 20 S., R. 9 W., Section 12. Another occurrence of uranium has been found in T. 20 S., R. 8 W., Sections 10 and 11, with traces of fluorine and lead. The presence of uranium in fluorite veins indicates possible uranium mineralization in the area of the WSA; however, the potential for uranium resources in the WSA is generally low because of the large deposits found in other areas.

##### 2. Nonenergy Minerals

As of September 17, 1984, approximately 75 mining claims were recorded with BLM inside the WSA. Ten of these claims were located prior to the enactment of the Federal Land Policy and Management Act (FLPMA) on October 21, 1976, while the remaining 65 claims were located after this date. As stated under Energy Minerals above, a total of 2,493 acres within the southern part of the WSA is withdrawn from mineral entry of any type.

##### a. Base and Precious Metals (Lead, Silver, Zinc, Copper, Gold, Molybdenum)

The Jose and Cooke's Peak mining districts, just north of the WSA (T. 20 S. R. 9 W., Section 14 and T. 20 S., R. 9 W., Sections 13 and 24), produced lead, silver, zinc, copper, and gold as late as 1947, with some intermittent production after this time. Mineralization in these areas occurs in replacement bodies in the upper part of the Fusselman, just below



# COOKE'S RANGE WSA (NM-030-031)

## PROPOSED ACTION--NO ACTION/NO WILDERNESS ALTERNATIVE

- WSA Boundary
- BLM
- Private
- State

State and private ownership is identified only inside the WSA boundary.

SCALE: 1/2 Inch=1 mile

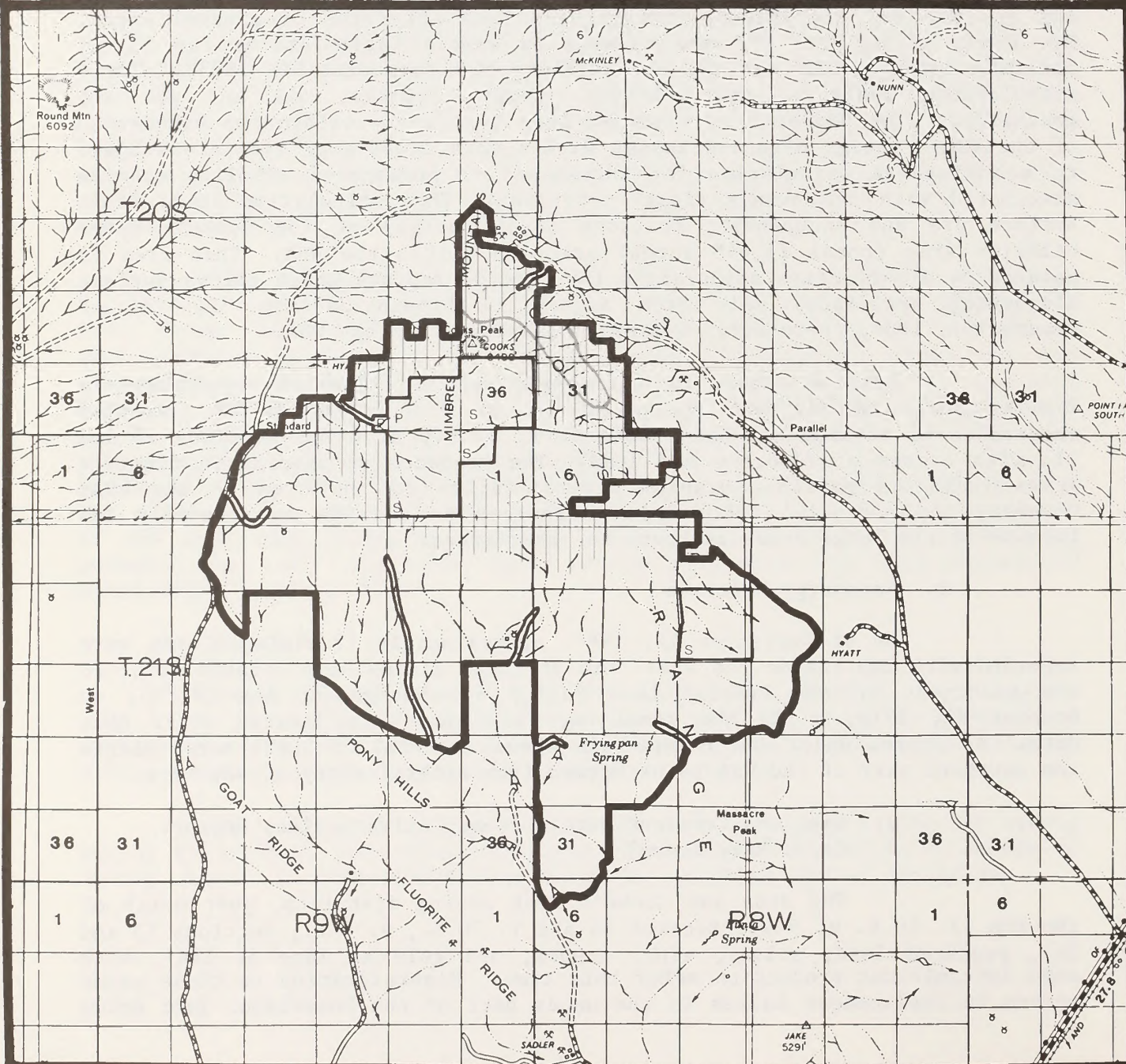
SOURCE: USDI BLM, Las Cruces District, January 1985

MAP 26-2

MINERAL RESOURCE POTENTIAL\*

□ Base and Precious Metals

\*Areas of high (1) and moderate (2) mineral potential are shown for lands within the WSA; the potential may extend outside the WSA boundary. Areas of low potential are not shown.





### PROPOSED ACTION--NO ACTION/NO WILDERNESS ALTERNATIVE

BLM

**State**

SCALE: 1/2 inch=1 mile

SOURCE: USDI BLM, Las Cruces  
District, January 1985

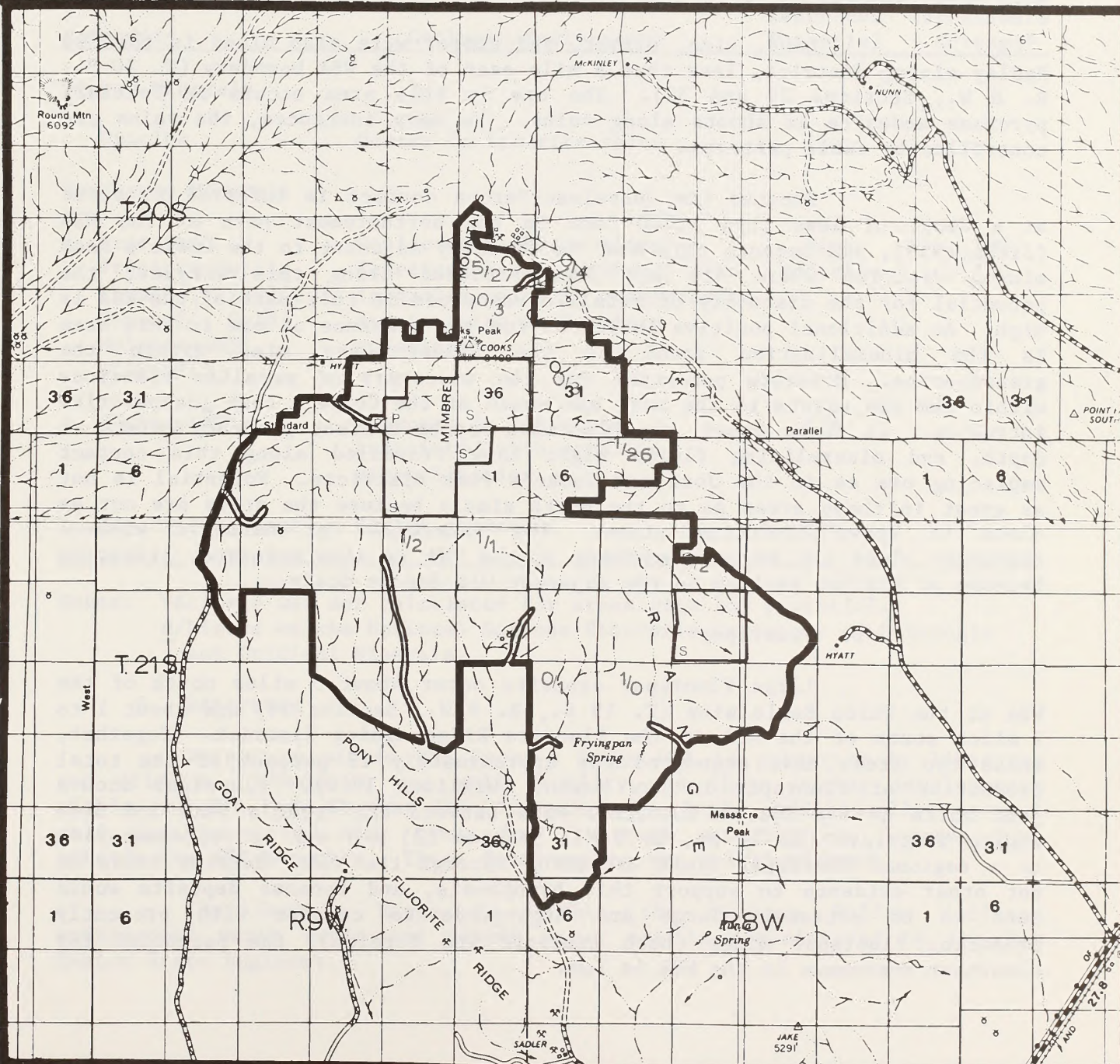
## MINING CLAIMS AND MINERAL LEASES\*

	Pre-FLPMA Mining Claims per section	Post-FLPMA Mining Claims per section
1/1		

(Claim information from BLM records dated September 17, 1984; claims which overlap more than one section are counted in each section in which they occur.)

FLPMA was passed October 21, 1976.

\*No mineral leases exist in the WSA as of BLM records dated December 1, 1984.





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the Percha shale, and appears to be associated with silicification. Emplacement of the ore was apparently controlled by faulting as well as by the barrier formed by the impermeable Percha formation (Jicha 1954). One mine on the western edge of the Jose mining district contains wulfenite crystals, although no production of molybdenum has been recorded.

Some mineralization has been discovered outside of the Fusselman, both in the Cooke's Peak granodiorite stock and in the Sarten sandstone (Jicha 1954). The ore occurrence within the granodiorite is within the WSA (T. 20 S., R. 9 W., Section 25) and has been known as the Silver Cave mine. This mine is said to have produced high grade silver ore, with minor amounts of copper and lead, from a 3-foot-wide quartz vein.

Lead, zinc, silver, and copper were also mined in the Old Hadley mining district, less than a mile east of the WSA boundary (T. 20 S., R. 8 W., Sections 29 and 32). The ore in this area occurs in Tertiary pyroxene andesite as shoots along veins. In many instances, the veins are controlled by fault patterns.

Because the Fusselman-Percha contact is inferred to occur at a depth of less than 1,000 feet in the northernmost part of the WSA (Jicha 1954), and because this area is directly adjacent to the Cooke's Peak mining district where ore has been produced along this contact, the potential for the discovery of metallic resources in this part of the WSA is high. An additional positive indicator for the presence of ore in this area is the mineralization found at the Silver Cave mine within the granodiorite. Moderate potential for the discovery of metallic resources within the WSA exists to the west and south of the Cooke's Peak granodiorite intrusive. In these areas, the Fusselman-Percha contact probably exists at depth, and mineralizing fluids might have travelled along this contact emplacing ore as in the Jose and Cooke's Peak districts. Potential is not as great in these areas as to the north simply because the areas are not as close to known producing mines. The potential for metallic mineral resources along the eastern boundary of the WSA is also moderate, primarily because of similar geology to the adjacent Old Hadley district.

### b. Fluorspar

Large fluorspar deposits occur about 5 miles north of the WSA at the White Eagle mine (T. 19 S., R. 9 W., Section 34) and about 1 to 2 miles south of the WSA in the Fluorite Ridge mining district. Together, these two areas have accounted for approximately 19 percent of the total production of fluorspar in New Mexico (Williams 1966). Fluorspar occurs just north of the WSA at Hurricane Pass between the Cooke's Peak and Jose mining districts (T. 20 S., R. 9 W., Section 13) and may be representative of a regional fluorspar trend extending through the WSA. Because there is not other evidence to support this hypothesis, and because deposits would need to be extremely large and high-grade to compete with presently producing fluorspar mines (both domestic and foreign), the potential for fluorspar resources in the WSA is low.



c. Decorative Stone

Some exposures of the Sarten sandstone in the southern part of the WSA, could be used as decorative stone. However, decorative stone is also available at other nearby locations such as Faywood, northwest of Cooke's Range. The lack of demand for decorative stone from this area combined with the lack of readily available transportation to market makes the potential for this commodity low.

MINERAL RESOURCES POTENTIAL OF THE COOKE'S RANGE WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Uranium	Occurs in fluorite veins	Low	--
Nonenergy Minerals			
Base and Precious Metals (Lead <sup>a</sup> /, Zinc <sup>a</sup> /, Copper <sup>a</sup> /, Gold, Molybdenum <sup>a</sup> /, Silver <sup>a</sup> /)	Replacement shoots along Fusselman-Percha contact; also in quartz veins in granodiorite and in veins in Tertiary andesites	High Moderate	1,100 3,700
Fluorspar <sup>a</sup> /	Prospect in limestone associated with metallic mineralization	Low	--
Decorative Stone	Sarten sandstone	Low	--

Notes: \*Acreage was not calculated for areas with low potential.

<sup>a</sup>/Listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.

B. Watershed

Water use within the Cooke's Range WSA is primarily by livestock and wildlife. There is one well facility and three spring developments within the WSA (see Chapter III, Livestock Grazing). Additionally, several well facilities and dirt tanks for livestock watering are located just outside the WSA boundary. These developments are cherry-stemmed.

The Cooke's Range is within the Mimbres Valley declared underground water basin and ground water use is administered by the New Mexico State Engineer.



## COOKE'S RANGE

### C. Livestock Grazing

#### 1. Allotments

Parts of four grazing allotments are within the Cooke's Range WSA. Licensed grazing use on public land includes cattle and a few horses. Most of the Cooke's Peak area of the Cooke's Range is inaccessible to livestock due to the steep slopes.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Treasure Rockhound 2009	5,330	564	2,048	38%
R. May 2029	1,174	264	626	53%
Mimbres Mtn. Rush 2030	11,057	1,548	4,574	41%
T. L. Hyatt 3028	32,918	6,768	12,360	38%
TOTAL			19,608	

#### 2. Ranch Management

#### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
R. May 2029	windmill	T. 20 S., R. 8 W., Sec. 31
Mimbres Mtn. Rush 2030	interior fence	3 $\frac{3}{4}$ miles
T. L. Hyatt 3028	spring	T. 21 S., R. 9 W., Sec. 10
	spring and trough	T. 21 S., R. 9 W., Sec. 11
	spring and trough	T. 21 S., R. 8 W., Sec. 20

#### Boundary Fences:

Mimbres Mtn. Rush 2030 and Treasure Rockhound 2009	1 $\frac{1}{2}$ miles
Treasure Rockhound 2009 and Hyatt 3028	3 miles

Note: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

### D. Recreation

This WSA is currently used for rockhounding, hunting, hiking, picnicking, camping, and sightseeing. Vehicle related recreation use occurs on the WSA boundary roads and on the six roads cherry-stemmed into the WSA. Many of these roads require four-wheel drive vehicles.



Portions of the Massacre Peak Petroglyph Area near Frying Pan Spring and Fort Cummings Recreation Area are within the WSA. These areas were classified for recreation and historic purposes under the Classification and Multiple Use Act of 1964 and are presently segregated from all forms of mineral entry (see Chapter II, Cultural, and Chapter III, Energy Minerals).

#### E. Education/Research

Dr. Richard Spellenberg of New Mexico State University's Department of Biology has been working on a remnant population of Arizona cypress on Cooke's Range which is approximately 1 mile north of the WSA boundary.

#### F. Wildlife

Some possibility exists that the Cooke's Range WSA could be a future desert bighorn sheep transplant site, but there is no timeframe as yet. According to the New Mexico Department of Game and Fish (NMDGF), more intensive study is needed because of the human disturbance factor. The area is on the NMDGF study priority list (Sandoval 1982).



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

The Cooke's Range WSA generally appears natural. Imprints of man within the WSA and along the boundary include access routes, rangeland developments, evidence of mining activity, and a telephone line.

Access routes include several vehicle trails (a total of approximately 8 miles) in the southern half of the WSA and six roads cherry-stemmed into the WSA from the west, south, east, and north boundaries. The vehicle trails have generally insignificant impacts on naturalness due to vegetative and topographic screening. The cherry-stemmed roads are also substantially unnoticeable. The rangeland developments located at the end of these cherry-stemmed roads impact naturalness locally. These developments include windmills and a large detention dam in Starvation Draw.

Rangeland developments located within the WSA boundary are substantially unnoticeable. These developments include a windmill, fence, and developed springs.

Mining activity in the northern portion of the WSA has had some impact on naturalness. Although there are mine shafts, small tailings piles, and an abandoned tramway, the impacts are mitigated by vegetative and topographic screening.

The single-wire telephone line which crosses through the southeast portion of the WSA in T. 20 S., R. 8 W., Sections 19 and 20, is constructed on 10 foot wooden poles without cross pieces. The telephone wire is attached to existing fences east and west of these sections. The telephone line provides service between the Hyatt ranch headquarters and Treasure Rockhound ranch headquarters. The telephone line does not have a right-of-way. Although the line can be seen in the immediate area, its impact on naturalness is reduced by topographic screening and use of native materials.

The major topographic features of the WSA are virtually pristine. Rugged canyons and steep ridges have restricted development to the periphery of the WSA with only minor developments being constructed within the range itself.

The WSA appears to have been affected primarily by the forces of nature and the imprint of man's work is substantially unnoticeable.

##### b. Solitude

The WSA's size, configuration, and topography are the most important factors in determining the area's opportunities for solitude.



The 19,608-acre WSA is approximately 7 miles long and from 1 to 6 miles wide. The large size of the WSA enhances opportunities for visitors to find a secluded place. The large block of undeveloped State and private lands which is cherry-stemmed into the northern portion of the WSA has little effect on opportunities for solitude at the present time. However, the resulting boundary configuration in this part of the WSA is such that outside sights and sounds could affect the quality of opportunities for solitude around Cooke's Peak.

The WSA's rugged topography also creates numerous opportunities for solitude. The major portion of the WSA in and around Cooke's Range provides outstanding opportunities for solitude. The combination of ridges and drainages creates a great deal of topographic relief and provides opportunities for seclusion in almost every drainage and on many of the ridges.

Opportunities for solitude in the creosote flats in the south and southwestern portion of the WSA are less than outstanding due to the lack of topographic screening.

#### c. Recreation

The Cooke's Range WSA offers a variety of primitive recreational opportunities. The area is large enough to support a three or four day pack trip. Opportunities also exist for rock climbing, horseback riding, and photography. Opportunities for deer hunting are good.

The rugged mountain range, with the steep ridges and canyons and lack of significant developments, offers an excellent opportunity to use outdoor skills and to interact with a natural environment. Opportunities for primitive recreation are enhanced by the size of the WSA and the diversity of vegetation and topography found in the WSA.

The State and private lands south of Cooke's Peak detract from the quality of opportunities for primitive recreation in the WSA. Hikers cannot climb the peak from the south nor can they hike directly through the WSA. Although visitors may still traverse the WSA by following the eastern and western boundaries, and the Peak is accessible along ridges from the north, east, and west, the primary point of interest in the WSA is not entirely available for recreational activities.

## 2. Special Features

The Cooke's Range WSA contains special ecological, cultural, and scenic features.

The ecological features include both vegetation and wildlife values of scientific and educational interest. The plant species in the WSA are numerous and diverse and in turn support a diverse wildlife community. Some reptiles of special scientific interest have been found in the WSA (see Chapter II, Wildlife). The WSA also provides habitat for a Bureau sensitive



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plant species proposed for Federal listing, Federal endangered plant species, and plant species selected by the New Mexico State Heritage Program as special concern elements (see Chapter II, Vegetation).

The special cultural and historical features of the WSA are among the most significant in the Las Cruces District (see Chapter II, Cultural). The Cooke's Range also has outstanding scenic features with a Class A (high) scenic quality rating (see Chapter II, Visual).

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the area as being in the Chihuahuan Desert Province with a potential natural vegetation of Trans-Pecos shrub savanna.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
mountain mahogany oak scrub	13,899
creosote	3,068
grama-tobosa shrubsteppe	879
Trans-Pecos shrub savanna	1,762

#### b. Distance From Population Centers

The Cooke's Range WSA is approximately 3 hours driving time from El Paso, Texas; 2 hours from Las Cruces, New Mexico; 5 hours from Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.

### B. Manageability

Both positive and negative factors affect the potential of the Cooke's Range WSA for being managed as wilderness: topography and size, the location of cherry-stemmed roads and rangeland developments, land status and boundary configuration, and pre-FLPMA and post-FLPMA mining claims.

The rugged topography and large size of the WSA would positively affect manageability of the area as wilderness. The area is large enough



and rough enough to accommodate visitors without compromising opportunities for solitude or recreation. Visitors would be channeled somewhat by the topography, but they would not be so restricted as to gather in one or two portions of the WSA.

Numerous roads are cherry-stemmed into the WSA. Vehicle use on these roads in combination with the local impacts of rangeland developments diminish the naturalness and solitude in the vicinity of the cherry-stemmed roads and thus affects the BLM's ability to manage the WSA to preserve wilderness values.

Cooke's Peak is the major topographic, recreational, and scenic focal point of the Cooke's Range WSA. However, all of Cooke's Peak is not in Federal ownership. Portions of the northwest, southwest, south, and southeast slopes of Cooke's Peak are in private and State ownership and as a result, the boundary in the north half of the WSA is very convoluted. Nonwilderness or nonconforming uses, such as mining activity, on these nonpublic lands could negatively affect the BLM's ability to manage the focal point of the WSA as wilderness. Providing access across BLM land or surface disturbing activities on these lands would negatively affect naturalness and opportunities for solitude in the heart of the WSA. Since mining activities on the non-Federal lands around Cooke's Peak are a good possibility, the surrounding land status and resulting boundary configuration represent a major manageability concern, especially for the north half of the WSA.

Approximately 2,493 acres in the southeast part of the WSA are segregated from all forms of mineral entry. This acreage is within the Massacre Peak Petroglyph Area and the Fort Cummings Recreation Area which were classified for recreation and historic purposes under the Classification and Multiple Use Act of 1964. The segregation of these areas from mineral entry would enhance the manageability of the area as wilderness by protecting natural values, opportunities for solitude and primitive recreation, and special features from the impacts of mining activity.

There are numerous mining claims within the Cooke's Range WSA. The presence of these claims affects the manageability of the WSA in two ways:

1. The Federal Land Policy and Management Act (FLPMA) specifies that mining uses that existed on the date of approval of the Act may continue in the same manner and degree during the time that an area is under wilderness review. Such mining uses are grandfathered and may continue even if the uses would impair wilderness suitability.

In addition, mining claimants may be recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976, and the claimant can show BLM that the claim continues to be supported by such a discovery. Valid existing rights convey a more liberal development standard than grandfathered rights in that



activities on valid claims are not limited to the same manner and degree. When it is determined that the valid existing rights can be exercised only through activities that will impair wilderness suitability, the activities will be regulated only to prevent unnecessary and undue degradation. If any of the pre-FLPMA claims in the Cooke's Range WSA which meet the above criteria are developed, wilderness values could be degraded before the area is designated wilderness.

2. Once an area is designated wilderness, the provisions of the Wilderness Act of 1964 and the Wilderness Management Policy (WMP) (BLM 1981) apply. Under the Wilderness Act and the WMP, holders of mining claims validly established in an area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations, "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the valid existing rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, wilderness values could continue to be degraded after the area is designated wilderness.

The mining districts, north and northeast of the WSA, produced strategic minerals in the past. Many of the mines along the north and northeast boundary of the WSA are patented. Future production is both possible and unpredictable. The presence of known occurrences of strategic minerals coupled with the numerous mining claims in and around the WSA represents a major manageability concern in the long-term. The Cooke's Range WSA could not be managed to preserve existing wilderness values over the long-term.



## V. CONSULTATION AND COORDINATION

## A. Public Involvement Overview

Numerous public comments were received on the Cooke's Range unit during the public comment periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). The WSA proposal for Cooke's Range was the second most commented on recommendation in the State. A map showing proposed boundary modifications and land status was included in the comments. Maps and photos of rangeland developments and roads also were provided. Comments opposing WSA status slightly exceeded comments favoring WSA status. Numerous form letters and petitions were received favoring WSA status for the area.

Comments favoring wilderness study cited the range's naturalness and outstanding opportunities for solitude and primitive types of recreation. The scenic, cultural, historical, and wildlife supplemental values of the area also were discussed.

Almost half of those comments opposing wilderness study cited mineral resource conflicts. Others discussed impacts resulting from rangeland management activities, nonpublic land inholdings, irregular boundary, and jet plane fly-overs.

More public inputs were received on the Cooke's Range WSA during the public review period on the Draft Environmental Assessment (DEA) Wilderness Study Areas in the Las Cruces District (BLM 1983) than any other WSA included in the document. The majority of the inputs (27 personal letters and 49 form letters) favored wilderness designation for the Cooke's Range WSA. Reasons for favoring wilderness designation fell into five categories: (1) basic wilderness values, (2) supplemental values, (3) size, (4) manageability, and (5) resource conflicts.

Comments regarding the area's basic wilderness values and supplemental values generally reiterated comments made in past public review periods. The Continental Divide Trail Society's comments stated that they favor routing the Continental Divide Trail through the Mimbres Mountains, along the east side of the Cooke's Range to Fort Cummings, Deming, and Columbus. The Society feels that this route would be superior to keeping the Trail along the actual Divide through the "bootheel." They favor wilderness designation for the Cooke's Range WSA so as to minimize the likelihood of developments that would detract from the recreational experience along the Trail.

Two comments indicated support for wilderness designation of an area greater than the 19,608-acre WSA. The acreage figures listed were 30,000 acres and 35,000 acres. Three other comments indicated that the WSA should be expanded to the north to include the endemic stand of Arizona cypress.

Comments regarding the manageability of the Cooke's Range WSA as wilderness varied. These included the general comment that the area is



manageable and disagreement with the use of manageability conflicts as the rationale for a nonsuitable wilderness recommendation. Several commentators indicated that the remoteness and ruggedness of the WSA would enhance wilderness management and the impacts of any future mining activities would be mitigated by vegetative and topographic screening, just as the existing impacts of past mining activities are now. Two comments expressed the opinion that cherry-stemmed private land in the WSA is not a manageability problem because it cannot be developed because of access and water problems, and the Federal mineral estate underlying the private surface cannot be mined without Government approval. Additional comments pertaining to the effects of the area's mineral values on manageability included: Congress can open the area if strategic minerals are needed in the future, BLM should only allow the development of existing claims and prevent further exploration, and the impending deadline for filing claims and the nature of the Cooke's Range will keep mining to a minimum. Several commentators suggested solutions to manageability conflicts. These included land exchanges for inholdings or contiguous non-Federal lands and closure of cherry-stemmed roads.

Pro-wilderness comments on resource conflicts in the Cooke's Range WSA all related to the area's mineral potential. The predominant attitude expressed in these comments was that the wilderness values of the Cooke's Range WSA outweigh mineral values. One commentator expressed the opinion that the conclusion in the WAR that there is high potential for nonenergy minerals at depth is not based on hard evidence that economic deposits exist. The comment went on to state that the extraction would be expensive and economic benefit questionable. Other comments included: the area has low potential for energy minerals, the WAR does not include a discussion of alternative sites in the region for those minerals found in the Cooke's Range, and the Government should not be concerned with the effects of wilderness on the value of valid claims in the WSA.

Fifteen personal letters were received opposing wilderness designation for the Cooke's Range WSA. More letters of opposition were received for this WSA than any other in the DEA. Two of the personal letters indicated agreement with the analysis in the WAR and one letter listed no reasons for opposing wilderness. The reasons cited in the other letters for opposing wilderness designation included: lack of naturalness due to mining activities and rangeland developments, the area has more roads than shown on map, and the area would be difficult to manage because of State and private inholdings.

Most of the comments listed the area's excellent potential for lead, zinc, and silver and past production of these minerals as reasons for opposing wilderness designation. One comment cited the area's oil, gas, and geothermal potential. Several comments expressed the opinion that additional exploration is needed to fully assess the area's mineral potential and wilderness designation would restrict mining activities too severely to allow continued development.

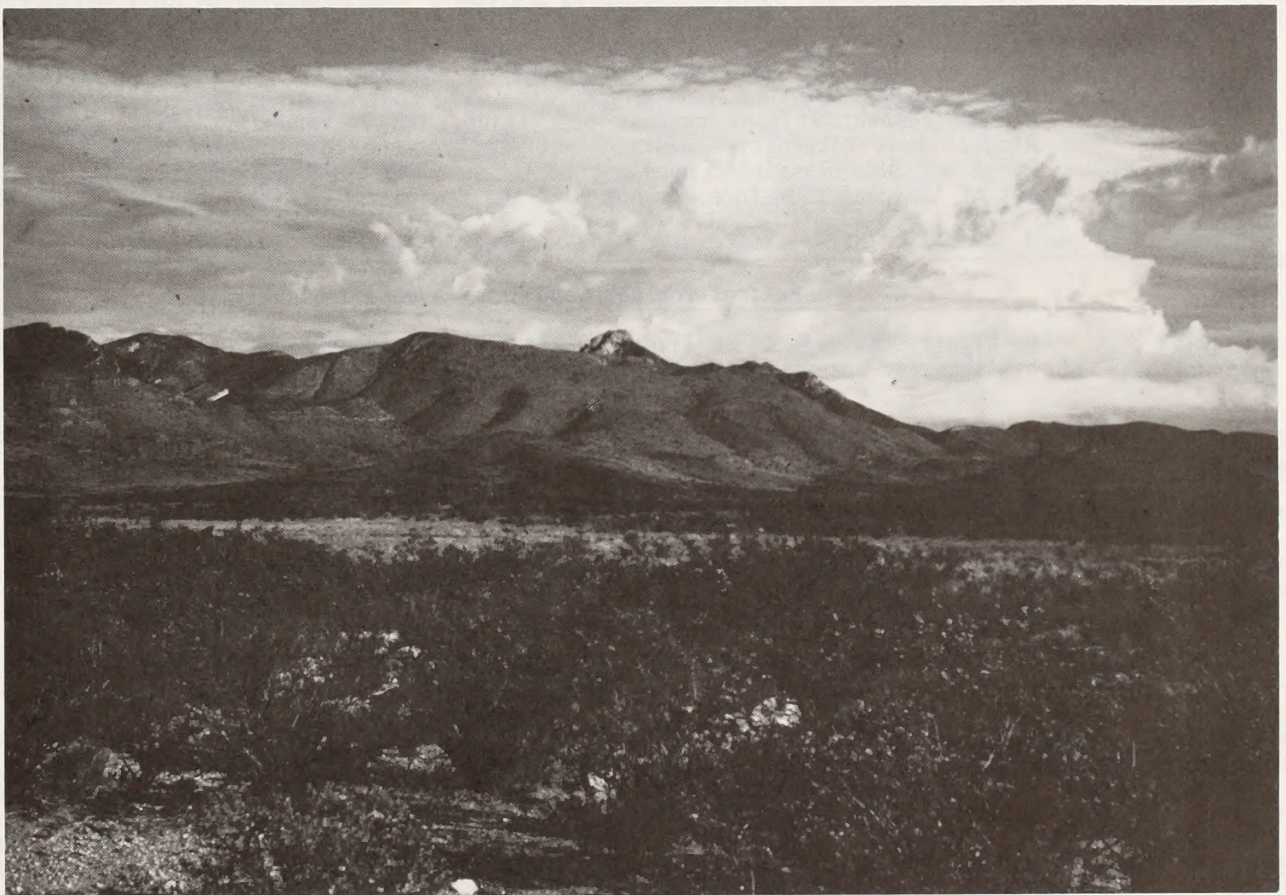
Other opposing comments speculated that wilderness would limit or ban access and collecting in this popular rockhound area and the area should



remain open to the public. One commentator suggested that a recreation area be established in the Cooke's Range area to protect the Frying Pan Spring petroglyphs and Pony Hills withdrawal from grazing. The New Mexico Natural History Institute agreed that resource conflicts and manageability problems render the area a less than ideal wilderness, but "Strong management provisions to protect outstanding biological values should come by other means."

#### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to energy minerals, water, soils, vegetation, wildlife, visual, cultural, air, recreation, realty actions, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



Looking towards Cooke's Peak from the southern part of the WSA.



## COOKE'S RANGE

### SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including This Alternative
Expanding the WSA Boundary on the North to Include the Arizona Cypress	This alternative was not considered further because it would require consideration of lands not nominated for wilderness study and not protected by the BLM Interim Management Policy. The size and boundaries of the Cooke's Range WSA were determined by the location of roads and land status. Part of the Arizona cypress stand is on a parcel of land that is not contiguous to the WSA; it is separated from the WSA by the road through Hurricane Pass, the road north from the Pass to the windmill and the patented mine in in T. 20 S., R. 9 W., Section 13.
Designation of the Cooke's Range as an Area of Critical Environmental Concern (ACEC) for Visual Resources	During preparation of the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983), the Cooke's Range was identified as a potential ACEC for visual resources. The mountain range meets the minimum required criteria for a potential ACEC because it rates high in scenic quality and relative scarcity. However, the total scenic resource (the mountain range) contains a significant amount of acreage in non-Federal ownership. Since the land status patterns of the Cooke's Range would significantly limit BLM's ability to protectively manage the total scenic resource, the area was eliminated from further consideration in the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983) as an ACEC for visual resources. Management of the Cooke's Range as an ACEC for visual resources could have been analyzed in the WAR under the No Wilderness/Amend the Existing Land Use Plan Alternative. However, since the land status situation has not changed, this alternative was not given further consideration in the preparation of the Cooke's Range WAR.
Designation of Portions of Cooke's Range as Recreation Lands	Under this alternative, portions of the Cooke's Range WSA would have been designated "Recreation Lands" as provided in 43 CFR 2071. The objective of this designation would have been to identify for the public the special recreation opportunities and values in and around the Cooke's Range WSA. The Cooke's Range Recreation Lands could have included, in addition to portions of the WSA, the following areas outside the WSA: the Massacre Peak Petroglyphs Area, the Fort Cummings Recreation Area, portions of the remnant Arizona cypress population, and rockhounding areas around Fluorite Ridge. This alternative was not analyzed because most of the lands in the Cooke's Range are not classified pursuant to the now expired Classification and Multiple Use Act of 1964 and therefore, do not meet the designation criterion under 43 CFR 2071.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Action/No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

### Issues Selected for Detailed Analysis

Wilderness values, special features, wilderness manageability conflicts, and locatable mineral resource conflicts were the issues identified for this WSA. The Cooke's Range WSA has scenic, cultural, historical, and special ecological features. Manageability conflicts affecting the WSA include cherry-stemmed roads and rangeland developments, land status patterns and boundary configuration, and existing mining claims. Within the WSA, an area of 1,100 acres is identified as having high potential and an area of 3,700 acres was identified as having moderate potential for base and precious metals. These issues were generally discussed in terms of the value of the area for wilderness versus the value of the area for mineral resources.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 19,608 acres of public land within the Cooke's Range WSA would be recommended suitable for wilderness designation. (See Map 26-1 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents would be managed under the constraints of the Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the existing wilderness values and special ecological, cultural, and scenic features in the area with long-term Congressional protection. However, the area surrounding Cooke's Peak could not be managed to preserve existing naturalness, outstanding opportunities for solitude and primitive recreation, and scenic values. The area around Cooke's Peak has high and moderate potential for base and precious metals. Mineral exploration and development activities on valid claims in this area would degrade wilderness values because of the increased presence of men and higher noise levels. The construction of access routes could partition parts of the WSA into areas of less than 5,000 acres. The outside sights and sounds of nonwilderness uses such as mining activities on the non-Federal lands northwest and southwest of Cooke's Peak could contribute to the degradation of natural values and opportunities for solitude and primitive recreation within the WSA in the long-term.

Vehicular use on the six cherry-stemmed roads in the WSA by recreationists, grazing permittees, and miners would disturb solitude in the vicinity of the roads.

The transplanting of desert bighorn sheep into the WSA would enhance the special wildlife features of the area.

The impacts to wilderness values under this alternative could be significant.

#### 2. Impacts to Minerals

Under this alternative, development work, extraction, and patenting of mining claims existing in the Cooke's Range WSA as of the date of designation would be allowed if the claims are determined to be valid. A mineral examination and subsequent mineral report must confirm that as of the date of designation, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a reasonable prospect of success in developing a valuable mine. At the present time, there are approximately 75 existing mining claims in the WSA or overlapping the



periphery. Estimates as to the number or locations of claims that would prove to be valid are beyond the scope of this report, as are predictions of the impacts of mining activities on such claims; however, it is likely that some claims in the area of high potential for metallic minerals are valid. Undue and unnecessary degradation of wilderness character would not be allowed, and the use of mechanical and motorized equipment would be authorized only if there are no reasonable alternatives. The mining companies may incur additional costs of operation depending on restrictions on acceptable mining methods and the type and location of acceptable access. Plans of Operations for mining on valid existing claims would include reclamation measures to provide for restoration as near as practicable of the surface of the land disturbed.

It is assumed that no new exploration, prospecting, or location of new mining claims would be allowed after wilderness designation. Mineral trends could not be followed outside of the existing valid claim boundaries. Full development of the mining district could not take place. The opportunity to explore an area of 1,100 acres with high potential and an area of 3,700 acres with moderate potential for base and precious metals would be forgone under the All Wilderness Alternative. Most of the minerals potentially in the WSA are on the list of strategic and critical minerals.

### 3. Impacts to Livestock Grazing

Generally, motorized access on the approximately 8 miles of vehicle trails within the designated wilderness would not be permitted. However, if there were no practical alternatives, a permit for vehicular access on  $\frac{1}{2}$  mile of existing trail could be authorized to maintain a developed spring on the Hyatt allotment (3028).

The windmill in OK Canyon on the May allotment (2029) is not accessed by an existing vehicle route. Although the WMP states that "motorized equipment uses will normally only be permitted...where they had occurred prior to the area's designation as wilderness...", the WMP also states that "the general rule of thumb on grazing management in wilderness should be that activities or facilities established prior to the date of an area's designation...should be allowed to remain in place and may be replaced when necessary for the permittee to properly administer the grazing program." Therefore, if there were no practical alternatives, a permit could be authorized for cross-country vehicular access to maintain this windmill.

The impacts to livestock operators would not be significant and would consist primarily of the minor inconveniences of securing permits.

### B. No Action/No Wilderness (Proposed Action)

Under the No Action/No Wilderness Alternative, the entire 19,608 acres of public land in the Cooke's Range WSA would be recommended unsuitable for wilderness designation.



If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

#### 1. Impacts to Wilderness Values

The wilderness values in the Cooke's Range WSA would not be provided with long-term Congressional protection. Management of the area as proposed in existing BLM land use plans would be subject to administrative change in the long-term.

The impacts of mining operations for locatable minerals on wilderness values within the area could be minimal to major depending on the extent and locations of the activities. Although mining activities would be regulated to prevent unnecessary and undue degradation and reclamation where reasonably practicable would be required, the result of extensive mining development and the construction of the required vehicular access could be the significant degradation of natural values, outstanding opportunities for solitude and primitive recreation, and scenic values as well as the partitioning of the WSA into roadless areas less than 5,000 acres.

Unrestricted vehicular use on the existing trails and cherry-stemmed roads in the WSA by recreationists, grazing permittees, and miners would disrupt solitude in the vicinity of these trails and roads.

The transplant of desert bighorn sheep into the WSA would enhance the special wildlife features of the area.

The impacts to wilderness values in the long-term could be significant under this alternative because management of the area would not be ensured through Congressional designation.

#### 2. Impacts to Minerals

There would be no impacts on locatable minerals under this alternative. Although 2,493 acres would remain segregated from all forms of mineral entry, the remainder of the WSA (17,115 acres) could be fully explored and prospected and additional mining claims could be located and developed. Such activities would be regulated under the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation to the land.

#### 3. Impacts to Livestock Grazing

All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing.







## APPENDIX 27

### COWBOY SPRING WSA (NM-030-007)

#### I. GENERAL DESCRIPTION

##### A. Location

The Cowboy Spring Wilderness Study Area (WSA) is located in Hidalgo County, New Mexico in the east half of the southern Animas Mountains. The WSA is approximately 50 miles due south of Lordsburg, New Mexico.

The most recent U.S. Geological Survey (USGS) topographic maps (1982 provisional editions) for the area are the Center Peak, Horse Mountain, and Gillespie Mountain, New Mexico 7½-minute quadrangles.

##### B. Climate and Topography

The Cowboy Spring WSA is characterized by a semiarid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is 10 to 12 inches. A wide variation in annual precipitation is characteristic of southern desert climates. Approximately half the annual precipitation occurs in July, August, and September as a result of thundershowers. The showers are generally brief but may be intense and result in flash floods in the arroyos. Snowfall generally averages about 5 inches a year.

During the summer months, daytime temperatures may reach 100°F. Average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the low 20's.

Winds are generated from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The WSA is dominated by Cowboy Rim, a prominent ridge 6,300 feet in elevation, running generally north-south through the east half of the WSA and curving to the west in the northern 1/3 of the WSA. Approximately 4 miles of the Cowboy Rim is within the WSA. Within the WSA boundary are the upper reaches of seven canyons that cut into the west side of Cowboy Rim. All of these canyons are tributaries of Walnut Creek, south of the WSA. The most prominent of these canyons is Elephant Butte Canyon, which is about 325 feet deep. Approximately 1½ miles of this canyon are within the WSA. An abrupt 500-800 foot bluff forms the eastern edge of Cowboy Rim. Bluff Creek cuts into the east side of Cowboy Rim in the southeast part of the WSA. Approximately ½ mile of Bluff Creek Canyon is within the WSA boundary.



## COWBOY SPRING

### C. Land Status

The WSA contains 6,699 acres of public land. There are no State or private inholdings. (See Map 27-1 for land status within the WSA boundary.)

### D. Access

Two routes provide physical access to the Cowboy Spring WSA. Both routes cross private land. There is no legal access to the area. Permission from the private landowners is required to reach the WSA.

Access to the WSA from the west is by way of State Highway 338, 14 miles south of Animas, to County Road C020. The Double Adobe Creek road branches to the south-southeast off of C020 after about 2 miles and terminates at the Double Adobe Creek ranch house. From there, access to the WSA is via 10 miles of pasture roads on the Gray Ranch.

Access to the WSA on the east is by way of State Highway 81, 18 miles southwest of Hachita, to County Road C016. After about 9 miles west on C016 to Young's ranch headquarters, it is  $4\frac{1}{2}$  miles southwest via a ranch road to the WSA.



Cowboy Rim.



# COWBOY SPRING WSA (NM-030-007)

Proposed Action--Research Natural Area

— WSA Boundary

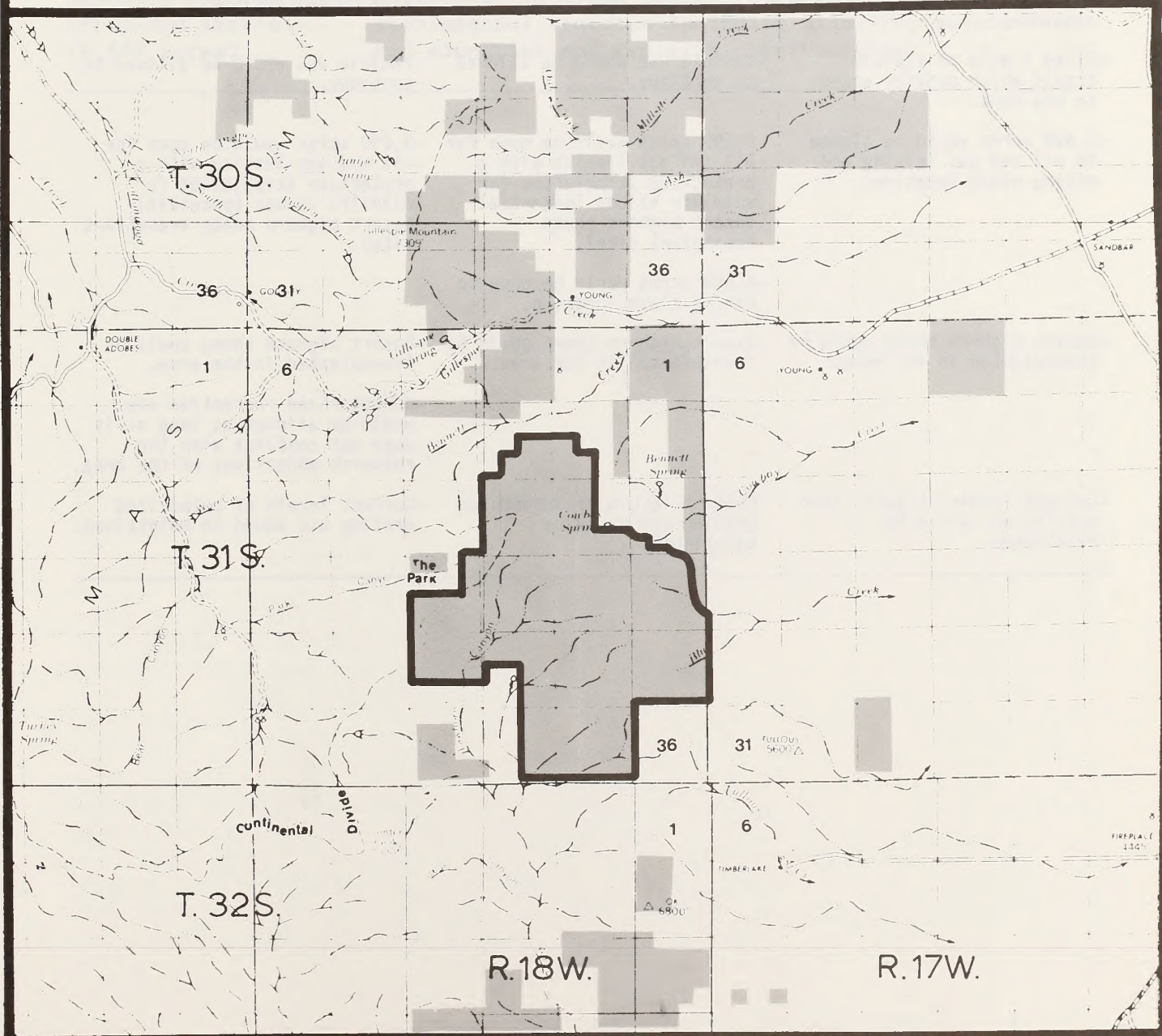
□ BLM

MAP 27-1

LAND STATUS

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District,  
January 1985





E. Proposed Action, Alternatives, and Issues

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Wilderness	Research Natural Area (Proposed Action)
°Manage 6,699 acres as wilderness.	°Manage 6,699 acres without wilderness protection.	°Manage 6,699 acres as a Research Natural Area (RNA) without wilderness protection.
-Research and education opportunities would be protected for the unique vegetation and wildlife associated with the Madrean woodland. Ongoing research on feral hogs, vertebrates, and the effects of fire could continue.		-Research and education opportunities would be protected for the unique vegetation and wildlife associated with the Madrean woodland. Ongoing research on feral hogs, vertebrates, and the effects of fire could continue.
-Close 1 mile of vehicle trails which provide access to the Park.	-Vehicle use would be allowed to continue.	-Vehicle use would be allowed to continue.
-6,699 acres would be closed to oil and gas leasing and mining claim location.	-6,699 acres would be open for oil and gas leasing with a protective stipulation for wildlife values (potential desert bighorn sheep transplant site).	-6,699 acres would be open for oil and gas leasing with a protective stipulation for wildlife values (potential desert bighorn sheep transplant site).
	-6,699 acres would be open to mining claim location.	
-Desert bighorn sheep could be transplanted in the area.	-Desert bighorn sheep could be transplanted in the area.	-Desert bighorn sheep could be transplanted in the area.
		-Nonmotorized recreation use would be allowed as long as it does not conflict with the research objectives of the area.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues
	Wilderness Values
All Wilderness (6,699 acres)	Wilderness protection would maintain the area's existing wilderness values.
No Wilderness (6,699 acres)	Wilderness values would not receive long-term Congressional protection. Natural values would be maintained in the short-term. Solitude and primitive recreation opportunities would be slightly impacted by vehicle use.
Research Natural Area (Proposed Action) (6,699 acres)	Management as a RNA would protect the existing supplemental features including wildlife, vegetation, and education and research opportunities.



## II. EXISTING RESOURCES

### A. Geology

The Cowboy Spring WSA lies within the Cowboy Rim cauldron which was formed as a result of explosive volcanic activity approximately 33 million years ago (Erb 1979). Structurally, Cowboy Rim is the upthrown block of a normal fault. Older structures in the area are obscured by thick deposits of Tertiary volcanics.

The major rock type in the WSA, including Cowboy Rim, is the Gillespie tuff, a thick welded tuff sequence which was probably erupted from the Cowboy Rim caldera. It is a dense, uniform, tannish pink cliff-former. Except for some Quaternary alluvium on the east side of Cowboy Rim, this is the youngest formation exposed in the WSA. A thin band of Cedar Hill andesite is exposed to the north and northeast of Cowboy Rim. It was erupted from the Juniper cauldron to the north (Erb 1979). The Bluff Creek formation, intermediate in age between the Gillespie tuff and the Cedar Hill andesite, is exposed in the southeast portion of the WSA. The Timberlake conglomerate is exposed on the eastern side of Cowboy Rim. This formation is of late Cretaceous-early Tertiary age and consists chiefly of limestone cobble conglomerate interbedded with sandstone, shale, claystone, and tuff.

### B. Water

The Cowboy Spring WSA forms a portion of the upper watershed on the western side of the Playas Basin. This drainage is one of several closed basins west of the Rio Grande.

Surface water within the WSA collects primarily in ephemeral tributaries of Walnut Creek. This main channel drains southeastward from the WSA and predominates as sheet flow near the valley floor. Surface flow generally occurs as a result of summer thundershowers.

Information on ground water in the WSA is limited. General direction of ground water movement is to the southeast, but below the bluffs of Cowboy Rim, movement is to the northeast. Ground water in the Playas Valley is obtained from the permeable sediments of the valley-fill with additional potential in the lower alluvial fans. Ground water quality in the Playas Valley is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

Soils of the Cowboy Spring WSA vary with the particular landform on which they are found. The most prevalent soil type occurs on steep hillsides at higher elevations where soils are shallow, stony, and are interspersed between areas of rock outcroppings. The soils become deeper and less rocky along the mountain footslopes and on alluvial fans at the base of the mountains. These soils are usually deep and very gravelly on the surface.



## D. Vegetation

## 1. General

The vegetation and associated range sites within the Cowboy Spring WSA consist of the following types:

Vegetation Type	Range Site	Federal Acres
Juniper-mixed		
mountain shrub	Mountain	6,285
Grass	Mountain	410
Mixed mountain shrub	Gravelly sand	4

Vegetation in the Animas Mountains alternates between grass and mountain shrub depending on slope and exposure. Shrub and tree species are many and varied. These are juniper, agave, sotol, Wright silktassel, sumac, ocotillo, mountain mahogany, oak, beargrass, snakeweed, turpentine bush, and creosote. Grass species are as diverse and include gramas, needle and thread, tobosa, vine-mesquite, foxtail, Hall's panic, threeawns, bush muhly, and lovegrasses.

Grass species (consisting of gramas, vine-mesquite, threeawns, and lovegrasses) are the dominant vegetation types on the west slopes of the mountains. Various shrubs and trees such as juniper, oak, beargrass, and turpentine bush occur in small amounts.

Mixed mountain shrub and tree species on the gravelly sand range site in the sandy bottom of Park Canyon include oak, juniper, and beargrass. Grama grass is also present. This area was identified as a pseudoriparian site and special habitat for wildlife. Only about 4 acres of this site in the upper reaches of Park Canyon are within the WSA boundary.

## 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.



## COWBOY SPRING

### E. Wildlife

#### 1. General

The largest part of the Cowboy Spring WSA is a mixed shrub habitat site. A smaller area of grass mountain is intersected by an oak draw. The proximity of these three sites creates an ecotone effect in which a diverse wildlife community is found.

The rugged rim, which forms the north and east boundaries of the WSA, adds to the value of the habitat as does the isolation of the area.

Golden eagles are fairly common and may nest on the rim cliffs. Mountain lions move through the area. There are healthy herds of javelina and Coues' whitetail deer. The latter is close to the east end of its range in the WSA. Montezuma quail, an uncommon species, have been observed in the WSA. Feral hogs also are found in the area (see Chapter III, Education/Research).

#### 2. Threatened or Endangered Fauna Species

After desert bighorn sheep, a State-endangered species, were transplanted into the Peloncillo Mountains in 1981, two rams left the area and moved into the Animas Range. One has periodically used the rim country of the WSA.

The gray wolf, which is on the Federal endangered species list, historically used the Animas and San Luis Ranges as a travel route. As recently as 2 years ago, a track was found within the WSA which could only be verified as a large canine track. However, the Gray Ranch biologist who found the track feels it is not likely that any domestic dogs were in the area (Steve Dobrott 1981).

Two other State-endangered species, the coatimundi and the Mexican turkey, are possibly found in the WSA. Both have been reported from the Animas Range and could find their preferred habitats in the WSA.

### F. Visual

The Cowboy Spring WSA is located within the East Animas Mountains scenic quality rating unit. The unit has a Class B (moderate) scenic quality rating. The landform consists of a complex of hills and low mountains with rocky outcrops. The line of the landform is generally sloping or undulating with occasional broken, angular lines at outcrops. Landform colors are muted tans and browns. Vegetation occurs in dark green clumps and as concentrations along natural drainage courses.

The WSA is in a Visual Resource Management (VRM) Class IV.

### G. Cultural

Three prehistoric sites have been identified in the Cowboy Spring WSA. They have not been fully evaluated but two of them could be



significant from a research standpoint to explain the little known use of high altitude sites by Mogollon groups in the desert Southwest. Based on topography and water sources rather than a verifiable archaeological survey, the Cowboy Spring WSA has moderate potential for cultural resources in comparison to other WSAs in the Las Cruces District. There are also a number of historic cabins near the WSA.

#### H. Air

Generally, the quality of the air within the Cowboy Spring WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The Phelps-Dodge copper smelter, located in the Playas Valley approximately 9 miles northeast of the WSA, might degrade the air quality of the WSA if atmospheric conditions are such that inversion layers or prevailing wind direction carries the smelter emissions to the WSA. This would occur primarily during the winter months.

The only major degradation of air quality occurs during the spring months (March-May), when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

The locations of lands under mineral leases are shown on Map 27-2.

##### 1. Energy Minerals (Oil and Gas)

There are presently nine oil and gas leases in the WSA, all of which are post-Federal Land Policy and Management Act (FLPMA). A protective stipulation for wildlife values would be attached to energy minerals leases let within this area (BLM 1983). The stipulation could limit surface use and occupancy.

The core of the Winkler anticline, consisting of the Pennsylvanian Horquilla limestone, is exposed in T. 31 S., R. 18 W., Sections 3 and 4, about a mile northwest of the WSA. Overlying the Horquilla are sediments of Permian age. None of these rocks crop out in the WSA, but they may be present in the subsurface. Wengerd (1970) considered the Winkler anticline to be a prime prospect for petroleum exploration; however, data from the KCM No. 1 Forest Federal well, drilled in 1974, indicate otherwise. This well was drilled on the anticline in T. 31 S., R. 18 W., Section 3, about 1½ miles north of the WSA. The well encountered quartz latite dikes, a quartz monzonite pluton, and metamorphosed sedimentary rocks. According to Thompson (1977), this information virtually eliminates the Winkler anticline as a petroleum prospect. This information, combined with the fact that the WSA lies within the Cowboy Rim cauldron, indicates that the entire WSA has very low potential for oil and gas.

##### 2. Nonenergy Minerals (Base and Precious Metals (Gold, Silver, Lead, Molybdenum), Fluorspar)

As of September 17, 1984, there were no mining claims recorded with the BLM within the WSA.

There are no known occurrences of metallic minerals in the WSA. The closest occurrences are located north of the WSA at the Gillespie mine, the Red Hill mine, and the Athena Fluorspar prospect. The Gillespie mine (T. 31 S., R. 18 W., Section 4), located about 1½ miles northwest of the WSA, was developed along a silicified vein in a calcareous siltstone of the Permian Earp formation (Zeller and Alper 1965). Apparently, some silver was mined, but there is no evidence of any production. The Red Hill mine (T. 30 S., R. 17 W., Section 30), located about 3½ miles northeast of the WSA, was developed along a breccia and fissure zone in the Tertiary Oak Creek tuff. Small shipments of lead and silver ore were made in the early 1900's (Anderson 1957; Zeller and Alper 1965). Fluorspar occurs along fractures in the Horquilla limestone on the Winkler anticline north of the WSA (Zeller and Alper 1965).

Potentially economic mineral deposits, if any, appear to be confined to areas north of the WSA. The known mineral deposits in this area are geologically unrelated to rocks in the WSA. Additional exploration



# COWBOY SPRING WSA (NM-030-007)

Proposed Action--Research Natural Area

MAP 27-2

— WSA Boundary

□ BLM

MINING CLAIMS AND MINERAL LEASES\*

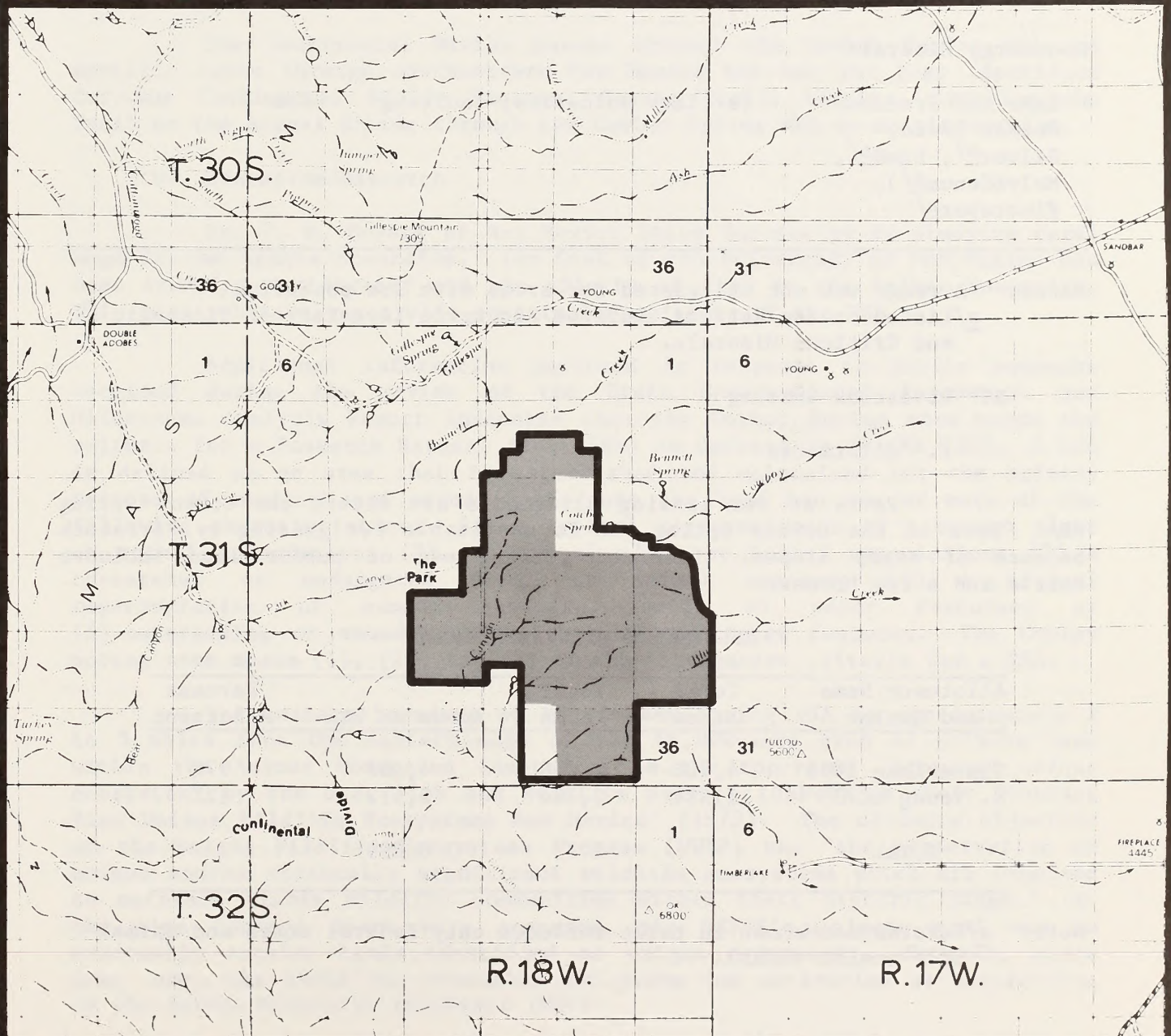
■ Post-FLPMA Oil & Gas Lease

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District,  
January 1985

\*No mining claims were recorded with  
the BLM within the WSA as of  
September 17, 1984.

FLPMA was passed October 21, 1976.





## COWBOY SPRING

would be necessary to assess the full mineral resources potential of the WSA, which presently appears to be low. It is unlikely that future exploration or development for metallics or other minerals would occur in this area.

### MINERAL RESOURCES POTENTIAL OF THE COWBOY SPRING WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Oil and Gas	Tertiary volcanics; possible anticline at depth	Low	--
Nonenergy Minerals			
Base and Precious Metals (Gold, Silver <sup>a/</sup> , Lead <sup>a/</sup> , Molybdenum <sup>a/</sup> ), Fluorspar <sup>a/</sup>	Tertiary volcanics; faulting	Low	--

Notes: \*Acreage was not calculated for areas with low potential.  
<sup>a/</sup>Listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.

#### B. Livestock Grazing

##### 1. Allotments

Parts of two grazing allotments are within the Cowboy Spring WSA. Some of the Cowboy Spring WSA is unsuitable for grazing by livestock because of steep slopes. Licensed grazing use on public land includes cattle and a few horses.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Timberlake 1066	4,200	1,056	4,087	97%
H. Young 1073	11,624	2,760	2,612	22%
TOTAL			6,699	

Note: <sup>a/</sup>Information shown in table reflects only Federal acres and animal unit months (AUMs).



## 2. Ranch Management

### Boundary Fence:

H. Young 1073 and Timberlake 1066      1½ miles

## C. Recreation

Although access to Cowboy Spring is limited, some deer hunting takes place in the WSA. The WSA is surrounded by private land and general public hunting is discouraged by the surrounding landowners. The Victorio's Gray Ranch on the east side of the WSA leases hunting rights on its private land. Some of these hunters probably spill over onto the public land within the WSA, especially in the area along the vehicle trail which provides access to the Park, an old homestead adjacent to the northwest boundary of the WSA.

The Continental Divide passes through the Cowboy Spring WSA. A specific route through southwestern New Mexico has not yet been identified for the Continental Divide National Scenic Trail; however, locating the Trail on the actual Divide through the Cowboy Spring WSA is an alternative.

## D. Education/Research

Dr. V. W. Howard of New Mexico State University is studying feral hogs in the Animas Mountains. Joe Cook of the University of New Mexico has been studying vertebrates and the effects of fire in the Animas Mountains. This research involves a wide area including parts of the WSA.

Additional information gathered in response to public comments received during the review of the Draft Environmental Assessment and Wilderness Analysis Report indicates that the Cowboy Spring area meets the criteria for a Research Natural Area (RNA) as defined in 43 CFR 8223. A RNA is defined as an area that is established and maintained for the primary purpose of research and education because the land has one or more of the following characteristics: (1) a typical representation of a common plant or animal association; (2) an unusual plant or animal association; (3) a threatened or endangered plant or animal species; (4) a typical representation of common geologic, soil, or water features; or (5) outstanding or unusual geologic, soil, or water features. The Cowboy Spring area meets (1), (2), and (3) of the alternative criteria for a RNA.

The western boundary of the Cowboy Spring WSA is approximately 2 to 3 miles from the eastern edge of the 46,000-acre area of private land within the Animas Mountains identified as the top-rated "proposed unique ecosystem" by the U.S. Fish and Wildlife Service (USFWS) in their "Concept Plan Unique Wildlife Ecosystems New Mexico" (1979). The ultimate objective of the Unique Wildlife Ecosystems Program (UWEP) was "the preservation of unique and/or nationally significant wildlife ecosystems which are required to maintain viable wildlife communities within their historic range." At the time Concept Plans were prepared, the USFWS' ultimate goal was to eventually acquire lands identified as unique ecosystems. However, since that time, the USFWS has cancelled all plans for activities or acquisition in the Animas Mountains (Dunkeson 1984).



## COWBOY SPRING

The Animas Mountains, including Cowboy Spring, are located at a transition point between the Colorado Plateau to the north and the Sierra Madre Occidental of Mexico to the south. As a result of this location, a wide variety of plant and animal species representative of both of these provinces can be found in the Animas Mountains.

The USFWS report identified five major community or habitat types in the 46,000-acre proposed unique ecosystem project area to the west of Cowboy Spring. The habitat types in the project area are: (1) grassland (dominated by tobosa grass, black grama, and some mesquite); (2) lower encinal (principally Mexican blue oak, Arizona white oak, emory oak, and alligator juniper); (3) upper encinal (principally netleaf oak, silverleaf oak, alligator juniper, Mexican pinyon pine, Chihuahuah pine, Mexican white pine, and Apache pine); (4) montane forest (principally ponderosa pine, Douglas fir, and Gambel oak); and (5) riparian woodland (primarily Arizona sycamore, velvet ash, Apacheplume, and snowberry). (Note: The habitat type descriptions used by the USFWS are not equivalent to the standard habitat sites identified by BLM in their Integrated Habitat Inventory Classification System (IHICS). IHICS information was used in preparation of the wildlife sections of this report.) This diversity of habitat types does much to account for the diversity of flora and fauna in the project area. Over 48 species of mammals, 110 species of birds (at least 85 of which are breeding), 22 species of reptiles and amphibians, and 36 species of butterflies have been found in the project area as well as approximately 715 species of plants, representing over 25 percent of the flora of New Mexico.

Two of the community or habitat types described above, grassland and lower encinal, plus an additional type, xeric shrubland, can be found in the Cowboy Spring WSA (Applegarth et al. 1980). Xeric shrubland is characterized by turpentine bush and broom snakeweed and often includes whitethorn, agave, sage species, grama grasses, sotol, ocotillo, muhlys, beargrass, prickly pear, mesquite, and yucca. The Cowboy Spring area provides habitat for many of the interesting and unique species found in the main part of the Animas Mountains to the west, such as the Coues' whitetail deer, Mearns quail, and Yarrow's spiny lizard, as well as the State-listed coatimundi and Mexican turkey.

Because the Cowboy Spring area is located along a transition zone between the Madrean evergreen woodlands of the Animas Mountains and the semidesert grasslands to the east, the WSA area also hosts a unique assemblage of flora and fauna and provides scientific and education opportunities. In addition, the area is the largest BLM-owned parcel of Madrean evergreen woodland in the State.

The management objectives of the Cowboy Spring RNA would be fivefold: (1) to preserve a sample of the Madrean evergreen woodland community and the unique vegetation and wildlife associated with the area; (2) to provide research and educational opportunities for scientists, educators, and others in the observation and study of this particular ecosystem. Scientists and educators would be encouraged to use the area in a manner that is nondestructive and consistent with the purpose for which



the area is established; (3) to preserve the full range of genetic diversity for native plants and animals; (4) to provide a basis for organized research and exchange of information on RNAs; and (5) to allow nonmotorized recreation activities as long as such activities are compatible with the scientific, research, and educational objectives for the area.

#### E. Realty Actions

A temporary State Aid Withdrawal was located within the Cowboy Spring WSA at the time the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983) was released. The State of New Mexico completed their land selection and the withdrawal was reviewed by the BLM. The revocation of the withdrawal became effective October 7, 1983.

#### F. Wildlife

There are no existing wildlife developments in the Cowboy Spring WSA. The WSA is a potential transplant site for desert bighorn sheep, although there is a problem because the ewes in the Peloncillo Mountains herd are pneumonia carriers. Sheep from a Cowboy Spring herd could move between the Peloncillo Mountains, about 25 miles to the northwest, and the Big Hatchet Mountains, about 15 miles east, carrying pneumonia to the Big Hatchet Mountains herd. According to Andy Sandoval of the New Mexico Department of Game and Fish (1982), if a pneumonia vaccine were developed, the Cowboy Spring Rim could be considered as a likely transplant site.



IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The Cowboy Spring WSA is natural. The two fences within the area are constructed of wooden posts and are substantially unnoticeable.

A two-track vehicle trail enters the WSA from the southwest, providing the only access to the Park, an old homestead adjacent to the northwest boundary. Approximately 1 mile of the trail crosses the western part of the WSA.

With the exception of the imprints of man described above, the Cowboy Spring WSA is virtually pristine and appears to have been affected only by the forces of nature.

b. Solitude

The Cowboy Spring WSA provides outstanding opportunities for solitude. Several factors affect the quality of these opportunities.

Most of the area is rugged and the remoteness of the area from any habitation enhances opportunities for solitude. Although the topographic relief and vegetative screening provide secluded niches where visitors might escape the sights and sounds of others in the WSA, the small size of the area would make it difficult to avoid other visitors to the area. The Wilderness Study Policy (BLM 1981) specifies size as a feature to be considered in evaluating the quality of an area's outstanding opportunities for solitude and states that "the emphasis is on the opportunities a person has to avoid the sights, sounds, and evidence of other people within a particular WSA... ." Certainly, it is more difficult to avoid other people in an area of limited size than it would be in a large area.

The Cowboy Spring WSA is surrounded on the north, south, and west by vast undeveloped areas of the rugged and, in places, densely vegetated Animas Mountains. The topographic aspect of the Cowboy Spring WSA, with its highest elevations along Cowboy Rim in the east and major drainages running generally south-southwest towards Walnut Creek, tends to focus attention on the main peaks of the Animas Range to the west and southwest. These peaks reach 8,000 feet at a distance of approximately 7 miles from the WSA. Because of its topographic aspect and small size, perceptions of outstanding solitude within most of the Cowboy Spring WSA (west of Cowboy Rim) are, to a large degree, dependent on the surrounding undeveloped non-Federal lands of the Animas Mountains.



### c. Primitive and Unconfined Recreation

This WSA provides outstanding opportunities for primitive and unconfined recreation. The rugged topography, isolation, and lack of legal access preclude the use of vehicles in the area for motorized recreation. Opportunities exist for hiking, horseback riding, deer hunting, climbing, and photography. The opportunities for dayhiking are excellent since the area can be traversed in a day. Although numerous small canyons are available for exploration from a base camp, backpacking and horsepacking opportunities are limited by the size of the WSA. Because of the small size of the WSA, the quality and diversity of recreation opportunities is less than it would be for a similar area of larger size.

The vast undeveloped areas of the Animas Mountains that surround the WSA on the north, south, and west influence the wilderness values within the WSA. These surrounding lands increase the recreational appeal of the Cowboy Spring WSA and the quality of opportunities for primitive recreation are, like solitude, to a large degree, dependent on the surrounding undeveloped non-Federal lands.

### 2. Special Features

The Cowboy Spring WSA contains special ecological and cultural features of scientific and educational value.

The ecological features include both vegetation and wildlife values. The WSA provides habitat for a Bureau sensitive plant species proposed for Federal listing and a plant species of special concern to the New Mexico State Heritage Program (see Chapter II, Vegetation). The presence of several different wildlife habitat sites within the WSA accounts for the wide diversity of wildlife found in the area. The area also provides habitat for the coatimundi and Mexican turkey, which are both State-endangered species (see Chapter II, Wildlife). The scientific and educational value of the WSA is evidenced by the fact that researchers at New Mexico State University and the University of New Mexico are presently engaged in wildlife-related studies in the Animas Mountains (see Chapter III, Education/Research).

The cultural features of the WSA consist of three prehistoric sites that may be of scientific and educational value (see Chapter II, Cultural).

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.



4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) system classifies this area as being in the Mexican Highlands Shrubsteppe Province. The potential natural vegetation is oak-juniper woodland.

The general nature of the Bailey-Kuchler System fails to show specific vegetation types of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	410
mountain mahogany-oak scrub	6,289

b. Distance From Population Centers

The WSA is approximately 4 hours driving time from Las Cruces, New Mexico; 5 hours from El Paso, Texas; 7 hours from Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.

B. Manageability

Two factors potentially affect the manageability of the Cowboy Spring WSA: the land ownership patterns surrounding the WSA and the potential for visitor concentrations into accessible areas of the WSA. The surrounding land ownership patterns and the potential for visitor concentrations into accessible areas are manageability concerns because of the internal topography and small size of the WSA.

The WSA is almost totally surrounded by State and private lands. Because of the internal topographic configuration of the WSA and its fairly small size (6,699 acres), nonwilderness or nonconforming uses on nonpublic lands along the WSA boundary could negatively affect wilderness values within the WSA. Developments on the non-Federal lands of the Animas Range west or southwest of the WSA would be noticeable from the central part of the WSA because of the topographic aspect of the area, which focuses attention on the Animas Range. Because the quality of opportunities for solitude and primitive recreation are, to a large degree, dependent on the panorama of the Animas Range to the west and southwest, the sights or sounds of nonwilderness activities on these lands could degrade the quality of these opportunities. Similarly, activities to the east or north of the WSA could be seen or possibly heard from the top of Cowboy Rim as well as along lower elevations on the steep east or north slopes of the Rim. For example, the Gillespie Mining District lies to the north of the WSA, with the Gillespie mine less than 2 miles from the northwest WSA boundary. Extension or acceleration of the mining activity in this area would be noticeable from the top of Cowboy Rim. Because BLM has no control over activities on most of the surrounding lands, it is difficult to assess the capability of



managing the Cowboy Spring WSA to preserve wilderness values in the long-term. The acquisition of significant parcels of the surrounding non-Federal lands would improve the manageability of the area as wilderness.

A second manageability concern involves the possibility of visitors being concentrated in specific areas of the WSA and the possible negative effects on the quality of solitude and primitive recreation opportunities. This is also a manageability concern because of the internal topography and small size of the Cowboy Spring WSA. The easiest access into the WSA at present is from the southwest. Entering the WSA here allows the hiker to visit the central portions of the area without scaling the steep east side of the Cowboy Rim. Because the area is fairly small and many visitors would probably choose to enter the area from the southwest, there is a possibility that visitors would tend to concentrate in an area of about 4,000 acres south and west of Cowboy Rim. There are seven major ridges and portions of seven canyons in this area of the WSA. The longest of these ridges is approximately  $2\frac{1}{2}$  miles in length and the longest stretch of canyon, approximately  $1\frac{1}{2}$  miles. Visitors would tend to be funneled along the ridges or in the canyons. As the numbers of visitors increased, the quality of opportunities for solitude would diminish as would the quality of primitive recreation opportunities. Extensive management measures involving permits and patrols would be required to ensure the availability of outstanding opportunities for solitude and to protect the existing quality of primitive recreation opportunities.

The Cowboy Spring WSA could be managed to preserve existing wilderness values as long as the non-Federal lands on the east slopes of the Animas Range remain undeveloped and natural. However, management of the area as wilderness would require more extensive and direct supervision than would a larger, similar area.



V. CONSULTATION AND COORDINATION

A. Public Involvement Overview

Public comments were received on the Cowboy Spring unit during the public review periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). Maps, photographs, road affidavits, and geological information on the oil and gas potential of the area were included with the comments.

Comments opposing wilderness review of the area dealt with resource and management conflicts such as visitor versus rancher, oil and gas potential, and conflicts with the Clean Air Act and the Phelps-Dodge copper smelter, 9 miles north of the WSA in the Playas Valley.

Comments supporting wilderness review of the area indicated that the unit offered opportunities for solitude because of its remoteness and offered outstanding recreation opportunities because of its ruggedness. Several comments identified the supplemental values of scenery and ecosystem relationships in support of the area.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983), 60 public inputs were received on the Cowboy Spring WSA. Nine of the inputs expressed opposition to wilderness designation for the Cowboy Spring WSA. Three of these inputs listed no supporting reasons and one input expressed agreement with the rationale outlined in the Draft Wilderness Analysis Report (WAR). The remainder of the comments addressed the mineral potential of the area.

The vast majority of the inputs (29 personal letters and 27 form letters) favored wilderness designation for the Cowboy Spring area. Two primary categories of supporting reasons were cited: (1) disagreement with BLM's assessment of potential wilderness manageability conflicts and (2) the ecological values of the area.

Comments on manageability included expressions of disagreement with the use of manageability conflicts to support a nonwilderness recommendation and general statements that the area is manageable. Many comments specifically addressed certain manageability issues discussed in the WAR, such as access and surrounding non-Federal lands. Observations regarding access were varied and included: the area is manageable because access is poor; accessibility is not a wilderness requirement; easements for access can be acquired; and the lack of legal access is a major problem regardless of wilderness status.

Comments concerning surrounding non-Federal lands were also varied. These comments included statements such as; "work towards making the area surrounding the WSA enhance wilderness," "past and present owners of adjacent private land have shown responsible attitudes to land management and conservation. Designation of Cowboy Spring would enhance this approach," and "manageability concerns are based on speculation about future uses."



The second major category of pro-wilderness comments concerned the ecological values of the area. General comments included wildlife and plant habitat, unique and threatened wildlife, and biological and zoological values. The New Mexico Natural History Institute noted that "this small area of Madrean woodland is the best remaining Federally-owned piece of the Animas Mountains--The top-rated 'unique ecosystem' in New Mexico in the (U.S.) Fish and Wildlife Service's survey." The New Mexico Department of Natural Resources added that Animas Mountain is a top priority for future acquisition or protection by the Nature Conservancy.

#### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to minerals, water, soils, visual, cultural, air, recreation, and realty actions are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



## COWBOY SPRING

### SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Expanding the WSA	This was not considered because it would require consideration of lands not nominated for wilderness study and lands not managed under the BLM Interim Management Policy.
An Alternative Boundary	There were no potential boundary adjustments identified which improved the quality of the area's wilderness values and improved the area's manageability.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Vegetation Education/Research	Although these issues are not analyzed in detail, certain aspects of these issues are addressed as part of the wilderness values issue.
Desert Bighorn Sheep	This issue is not analyzed because the WSA is only a potential transplant site for desert bighorn sheep.
Livestock Grazing	No significant impacts were identified for livestock grazing; however, this issue will be discussed because of Statewide interest.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Wilderness	Required by the BLM Wilderness Study Policy.
Research Natural Area (Proposed Action)	Public comments prompted the Bureau to reconsider the appropriateness of some form of special designation for the Cowboy Spring area.

#### Issues Selected for Detailed Analysis

The issues identified for this WSA are the quality of the area's outstanding opportunities for solitude and primitive recreation, potential manageability as wilderness, and the area's ecological values. The degree to which the WSA's size and topography and the surrounding non-Federal lands affect the quality of opportunities for solitude and primitive recreation are the basic concerns for the quality of wilderness values issue and the manageability issue. The significance of the area's plant and animal habitats and the appropriateness of some form of special designation are the crux of the ecological values issue.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 6,699 acres of public land within the Cowboy Spring WSA would be recommended suitable for wilderness designation. (See Map 27-1 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the high quality natural values, outstanding opportunities for solitude and primitive recreation, and special features present in the Cowboy Spring WSA with significant long-term Congressional protection. The transplant of desert bighorn sheep would enhance the special wildlife features of the Cowboy Spring area. Wilderness designation would ensure long-term protection for the wide variety of plant and animal species found in the area as a result of its location along the transition zone between the Madrean evergreen woodlands of the Animas Mountains and the semidesert grasslands to the east.

Although the area would be specifically managed to maintain these values, two factors could impact the ability of the BLM to manage the area as wilderness in the long-term. Because of the WSA's fairly small size and topographic aspect, nonwilderness uses on the non-Federal lands that almost totally surround the area could degrade the quality of outstanding opportunities for solitude and primitive recreation. Due to the small size and topography of the area, wilderness visitors could naturally tend to concentrate in the areas south and west of Cowboy Rim. As visitor numbers increased, the quality of solitude opportunities would diminish. Extensive management measures such as permits and patrols would be required to ensure the availability of outstanding opportunities for solitude.

#### 2. Impacts to Livestock Grazing

Generally, motorized access within the designated area would not be allowed. The 1 mile of vehicle trail through the western part of the WSA provides access to the rangeland developments at the Park just outside the WSA boundary. Since this trail would be closed and rehabilitated under wilderness management, alternative access to the Park would be required. The impacts on the livestock operator (Timberlake 1066) of locating and possibly constructing an alternative access route to the Park would not be significant. General impacts to both livestock operators in the Cowboy Spring area would consist primarily of inconveniences resulting from the prohibition of motorized vehicles in the designated area.



## COWBOY SPRING

### B. No Wilderness

Under the No Wilderness Alternative, the entire 6,699 acres of public land within the Cowboy Spring WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III. The area would be managed under existing land use plans which do not prescribe any special designation or management other than leasing the area for energy minerals with a protective stipulation for wildlife values.

#### 1. Impacts to Wilderness Values

The Cowboy Spring WSA's high quality natural values, outstanding opportunities for solitude and primitive recreation, and special features would not be provided with long-term Congressional protection. Since existing and proposed BLM plans do not identify any activities which would impair wilderness values, the entire area would probably retain its overall natural character in the short-term. Continuation of vehicle use on the vehicle trail into the western part of the WSA would slightly impact opportunities for solitude and primitive recreation in that part of the area. The transplant of desert bighorn sheep would enhance the special wildlife features of the area. However, since management of the area as specified in existing land use plans would be subject to administrative change, the impacts to wilderness values under this alternative could be significant in the long-term.

#### 2. Impacts to Livestock Grazing

There would be no impacts to livestock grazing under this alternative.

### C. Research Natural Area (Proposed Action)

Under this alternative, the entire 6,699 acres of public land within the Cowboy Spring WSA would be recommended nonsuitable for wilderness designation and designated as a Research Natural Area (RNA).

Existing land use plans would be amended to allow administrative designation of the entire area as a RNA under the authority of 43 Code of Federal Regulations (CFR) 8223. The management objectives for the Cowboy Spring RNA would be as follows: (1) to preserve a sample of the Madrean evergreen woodland community and the unique vegetation and wildlife associated with the area; (2) to provide research and educational opportunities for scientists, educators, and others in the observation and study of this particular ecosystem. Scientists and educators would be encouraged to use the area in a manner that is nondestructive and consistent with the purpose for which the area is established; (3) to preserve the full range of genetic diversity for native plants and animals; (4) to provide a basis for organized research and exchange of information on RNAs; and (5) to



allow nonmotorized recreation activities as long as such activities are compatible with the scientific, research, and educational objectives for the area.

#### 1. Impacts to Wilderness Values

The Cowboy Spring WSA's high quality natural values, outstanding opportunities for solitude, and special features would be substantially maintained under management as a RNA as long as the area is administratively designated, since destructive uses of the RNA would not be allowed. The area's primitive recreation opportunities would be maintained, but making the area available to the public for recreation activities would have less priority than use of the area for education and research purposes. Management as a RNA would enhance the scientific and educational special features of the area since only those activities consistent with the purposes of the RNA would be authorized. However, since the area would not be provided with Congressional protection, the impacts to wilderness values could be significant in the long-term.

#### 2. Impacts to Livestock Grazing

Since there would be no change in grazing use or the use of vehicles in grazing management, there would be no impact to livestock grazing.







## APPENDIX 28

### FLORIDA MOUNTAINS WSA (NM-030-034A)

#### I. GENERAL DESCRIPTION

##### A. Location

The Florida Mountains Wilderness Study Area (WSA) lies in the southeast quadrant of Luna County, approximately 10 miles southeast of Deming, New Mexico.

The U.S. Geological Survey (USGS) topographic maps covering the WSA are the Capitol Dome, South Peak, Florida Gap, and Gym Peak, New Mexico quadrangles. All four of these maps are at the 7½-minute scale.

##### B. Climate and Topography

The Florida Mountains WSA is characterized by an arid, continental climate. Annual precipitation totals average between 8 and 10 inches, with 12 to 14 inches at elevations greater than 6,000 feet. Over 50 percent of the total occurs from July through September as a result of high intensity, short duration thundershowers.

Temperatures reach a maximum in July with average afternoon temperatures ranging from 90° to 100°F. In the higher elevations, the temperatures are typically 10° to 15° cooler. Minimum temperatures during the winter months range from the low 20's to near freezing. Winter daytime temperatures tend to be mild, ranging from 35° to 50°F.

Surface winds are predominantly from the southeast in summer and from the northwest in winter, but local surface wind direction will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The Florida Mountain range rises over 2,800 feet above the surrounding basins and dominates the landscape for miles around. Several peaks have elevations of over 7,000 feet; among them are Florida, South, and Gym Peaks. The mountain range is approximately 10 miles long, trending north and south, and up to 5 miles wide. The topography is rugged with steep canyons and near vertical cliffs. Alluvial fans slope toward the valley floors on all sides of the mountain range.

##### C. Land Status

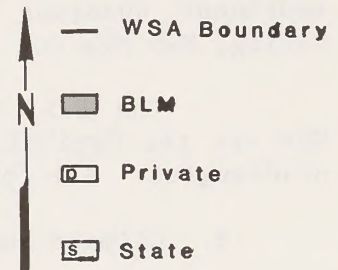
The Florida Mountains WSA contains 22,336 acres of public land. There are 80 acres of State inholdings and 26.83 acres of private inholdings within the WSA boundary. The private inholding is a patented mining claim. (See Map 28-1 for land status.)



**FLORIDA MTNS. WSA  
(NM-030-034)**

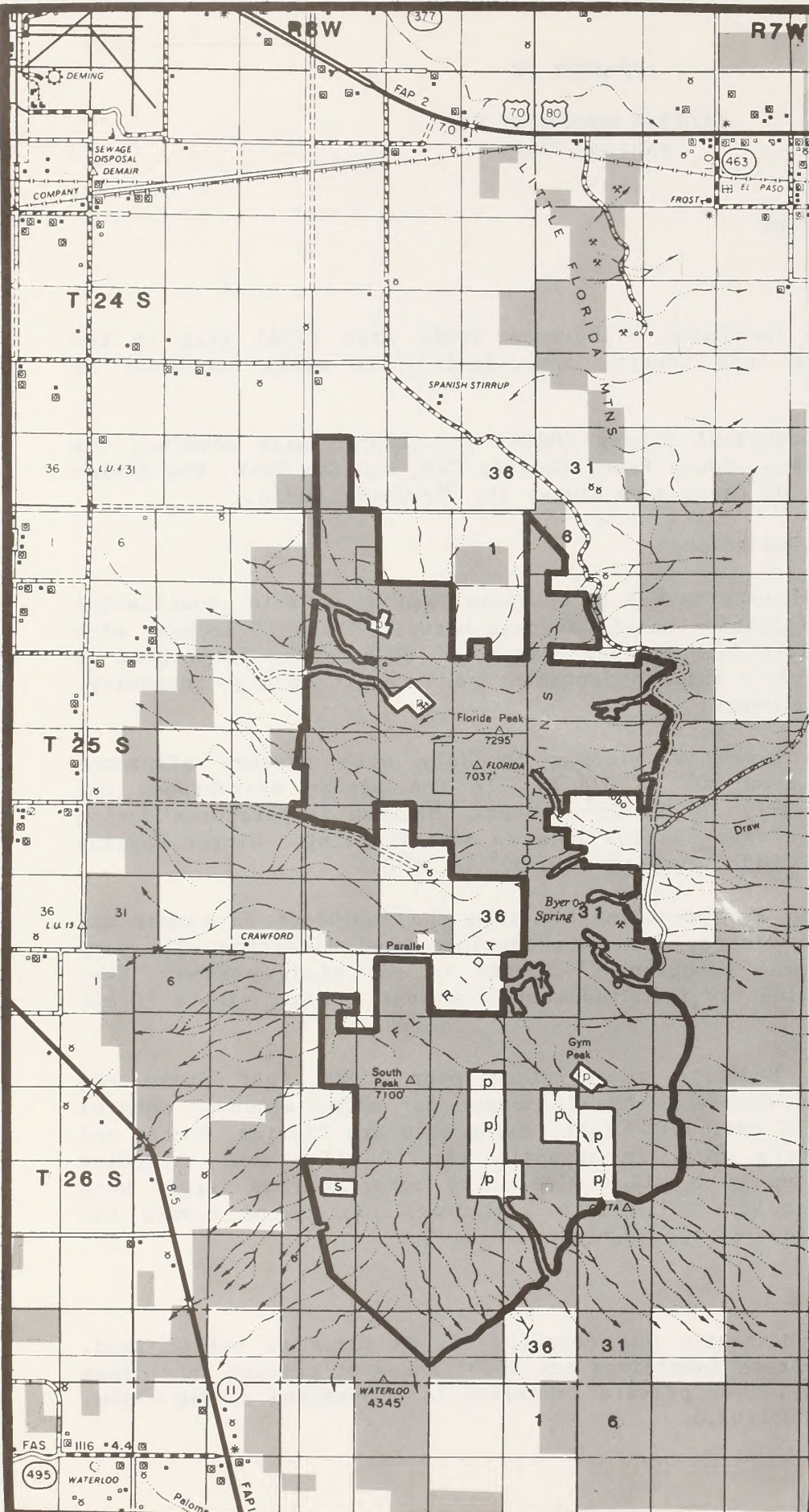
**Proposed Action--No  
Action/No Wilderness  
Alternative**

**MAP 28-1  
LAND STATUS**



Scale: 1/2 inch=1 mile

Source. USDI BLM, Las  
Cruces District, January  
1985





## D. Access

The Florida Mountains WSA is legally accessible from County Road B023. Approximately 4 miles south of Deming, New Mexico on State Highway 11, County Road B023 runs due east towards the Little Florida Mountains and Rockhound State Park. After about 6 miles, B023 turns to the southeast for approximately 5 miles. The County maintained road ends on the northeast boundary of the WSA. Additional physical access along the east and south boundaries of the WSA is available from the ranch road continuing south from B023.



## FLORIDA MOUNTAINS

### E. Proposed Action, Alternatives, and Issues

#### DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Action/No Wilderness (Proposed Action)
°Manage 22,336 acres as wilderness.	°Manage 22,336 acres without wilderness protection.
-Attempts would be made to acquire approximately 3,260 acres of State and 3,490 acres of private lands within and adjacent to the WSA.	-No special attempts would be made to acquire State and private lands.
-Close 7 miles of vehicle trails.	-Vehicle use would be allowed to continue.
-Require permits for vehicle access to maintain 1 windmill and 2 improved springs.	
-Ibex population and habitat would be managed under the existing Habitat Management Plan.	-Ibex population and habitat would be managed under the existing Habitat Management Plan.
-Use of helicopters for monitoring ibex populations or emergency repair of umbrella catchments would be allowed.	-Use of helicopters for monitoring ibex populations or emergency repair of umbrella catchments would be allowed.
-22,336 acres would be closed to future energy minerals leasing and mining claim location.	-22,336 acres would be open to prospecting, mining claim location, exploration, and development.
-Exploration and development activities for base and precious metals, fluorspar, or manganese could occur on valid mining claims.	-12,338 acres would be open to energy minerals leasing with a special stipulation to protect nesting raptors.
	-9,998 acres would be open to energy minerals leasing with no special stipulations.
-Current levels of authorized grazing use would be maintained.	-Current grazing levels of authorized would be maintained.
-1,000 feet of pipeline for a livestock water could be installed with no motorized access if necessary for wilderness or rangeland protection.	



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues	
	Nonenergy Minerals Exploration and Development	Wilderness Values
All Wilderness (22,336 acres)	Opportunities for exploration and development activities would be forgone in the following areas: 500 acres with high potential and 1,000 acres with moderate potential for base and precious metals, 400 acres with moderate potential for fluorspar, and 1,300 acres with moderate potential for manganese.	Wilderness protection would maintain the area's existing natural appearance. Naturalness, outstanding opportunities for solitude and primitive recreation, and scenic special features could be degraded if valid mining claims are developed.
No Action/No Wilderness (22,336 acres) (Proposed Action)	No significant impacts.	Wilderness values could be degraded by exploration and development activities in areas of high potential for base and precious metals (500 acres). Over the long-term, exploration activities in areas of moderate potential for base and precious metals, fluorspar, and manganese (2,700 acres) could degrade naturalness.



## FLORIDA MOUNTAINS

### II. EXISTING RESOURCES

#### A. Geology

The oldest rocks exposed in the Florida Mountains are metamorphic rocks of Precambrian age. Precambrian plutonic rocks, including limited exposures of mafic intrusions and more extensive granitic and syenitic intrusions, form the core of the mountains. Approximately 3,700 feet of Paleozoic sediments were deposited on top of Precambrian basement rock, but uplift and erosion during the late Paleozoic and early Mesozoic eras removed large portions of these sediments (Clemons 1982). Deposition of late Cretaceous-early Tertiary sediments on Precambrian rocks in the northwest and southeast parts of the range was followed by deposition of a thick volcanic pile and the emplacement of aplite dikes.

Mountain-building activity began in the late Cretaceous period with the formation of thrust faults and steeply dipping reverse faults during the Laramide orogeny. These faults are particularly evident in the southern part of the Florida Mountains where Precambrian granite has been uplifted relative to Paleozoic sediments along a series of reverse faults. The present day Florida Mountains were uplifted along north-south boundary faults and tilted slightly to the east. Vertical displacement along the boundary faults appears to be about 4,000 feet (Corbitt 1971).

#### B. Water

The Florida Mountains WSA is situated within the southeast portion of the Mimbres Basin, a closed basin with interior surface water drainage.

Surface water within the WSA drains into the Mimbres Basin through an ephemeral stream system. Principal drainages include Spring and Windmill Canyons to the northeast; Capitol Dome Draw and Mexican Canyon to the northwest; and Copper Kettle, Box, and Victorio Canyons to the southeast. These ephemeral streams flatten out below the alluvial fan slopes and become a nonintegrated system of washes and arroyos in the valley floors. There are several scattered springs in the WSA; however, the springs' contribution to surface flow is limited. They are important locally in support of riparian vegetation.

Ground water in the WSA is available primarily from bolson deposits on the alluvial fans coming off the Florida Mountains. Secondary aquifers consist of Tertiary volcanics and Cretaceous shales, sandstone, and limestone. Water yields from these secondary aquifers are generally small.

The ground water reservoir is recharged mainly during flood runoff by infiltration in ephemeral stream channels. Ground water movement generally follows the direction of major drainage channels towards the valley floors. Water quality in the area is generally very good with low total dissolved solids and low dissolved metals content.



### C. Soils

Two major soil types occur in the Florida Mountains WSA. Soils at higher elevations are residual, ranging in depth from very shallow to moderately deep on slopes from 0 percent to over 70 percent. The soils are typically very cobbly and stony loams interspersed between areas of rock outcropping located on ridgetops, ledges, and cliffs.

At lower elevations, soils formed from mixed materials on old alluvial fans along the footslopes of the mountains. Slopes range from nearly level to about 10 percent. The soils are moderately deep to deep with textures ranging from very gravelly sandy loams to gravelly clay loams.

In addition to the two major soil types, the ephemeral streambeds in the canyon bottoms typically contain sandy soils stratified with gravels and cobbles. Texture and depth of the soils are variable depending on the amount of material deposited or removed by each flow of water.

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Florida Mountains WSA consist of five major types:

Vegetation Type	Range Site	Federal Acres
Grass-mixed desert shrub	Hills	12,907
Snakeweed-mixed desert shrub-grass	Gravelly loam	3,413
Creosote-grass	Gravelly	4,411
Snakeweed-mesquite-yucca-other shrubs and trees	Sandy	1,289
Other shrubs and trees-mixed desert shrub	Gravelly sand	316

Many grass species are present in the Florida Mountains WSA. Gramas and tobosa are the most prevalent grass species. Associated shrub species are varied and diverse. The main shrub and tree species on the mountain slopes include snakeweed, sumac, creosote, sotol, beargrass, mesquite, tarbush, prickly pear, feather peabush, yucca, and juniper.

Snakeweed, mixed desert shrubs, and grasses are the dominant vegetation on the gravelly loam areas on slopes around the base of the mountains. The mixed desert shrubs include mesquite, yucca, sumac, Mormon tea, spicebush, mariola, range ratany, and tarbush. Many other shrubs occur in small quantities. Major grass species present include black grama, tobosa, sideoats grama, threeawns, bush muhly, cane bluestem, and fluffgrass.



## FLORIDA MOUNTAINS

The gravelly soils on the south and east slopes of the mountains are dominated by creosote, snakeweed, and mariola. Associated grass species include grammas, threeawns, fluffgrass, and tridens.

Sandy soils occur in the flats surrounding the mountain range. Snakeweed, yucca, mesquite, and other shrubs and trees are the dominant vegetation types. Other shrub species include Mormon tea, Wright's buckwheat, range ratany, sumac, creosote, rabbitbrush, spicebush, fourwing saltbush, and whitethorn acacia. Grass species include tobosa, threeawns, cane bluestem, and sideoats grama in small quantities.

The gravelly sand range sites identified in lower elevation drainages are pseudoriparian and have been identified as having important wildlife values. Mixed desert shrubs and other shrubs and trees are the dominant vegetation types on this range site. These vegetation types include hackberry, Mormon tea, snakeweed, Apacheplume, sumac, mesquite, sotol, juniper, oak, desert willow, ocotillo, mimosa, pinyon, and walnut. Some grasses occur in small quantities.

### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus  
Status: Bureau sensitive species proposed for Federal listing.  
Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Coryphantha orcuttii var. koenigii - Koenig's coryphantha  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Grows on black limestone on south facing slopes, usually in small, dense clusters at approximately 5,000 feet.

Species: Ferocactus wislizenii - southwestern barrel cactus  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to overcollection.

Species: Pinus edulis var. fallax  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Scattered along canyon bottoms with Apacheplume and junipers.

Species: Sphaeralcea wrightii - Wright's globemallow  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Rocky slopes in arid grasslands or deserts from 4,600 to 6,000 feet.



## E. Wildlife

### 1. General

The upper elevations of the Florida Mountains WSA contain mixed shrub mountain habitat sites with inclusions of pinyon-juniper sites. A variety of shrub sites are found around the edge of the mountains including creosote, mixed shrub, half-shrub, and snakeweed. Several pseudoriparian sites were identified in lower elevation drainages.

The Florida Mountains are fairly well-watered for a desert range. A number of springs and seeps are found between 5,000 and 6,000 feet. Some of these have riparian vegetation associated with them, such as cattails, willows, and grapevines. Water is also available high on the mountain in several locations at umbrella catchments, seeps, and a trough filled by a miner. Other special habitat features which encourage wildlife use are the extensive cliffs of the Florida Mountains. Prairie falcons and golden eagles both nest on these cliffs.

The wildlife community is similar in most ways to other desert mountain ranges such as the Cooke's Range and the Organ Mountains. The Florida Mountains host a desert mule deer population, prairie falcons, eagles, red-tailed hawks, great horned owls, and nesting birds typical of mixed shrub mountain communities such as ladder-backed woodpeckers, canyon wrens, and black-chinned sparrows.

The wildlife community of the Florida Mountains also differs from nearby ranges. There is a small javelina population and the Florida Mountains are home to an introduced herd of Persian ibex. Fifteen individuals of this exotic species were released in the Florida Mountains in 1970. Seventy-three more animals were released at later dates. In September 1983, 647 Persian ibex were counted during an aerial census of the Big and Little Florida Mountains.

### 2. Threatened or Endangered Fauna Species

There are no known threatened or endangered animal species in the Florida Mountains WSA. Since there is excellent cliff nesting habitat, the range was included in a peregrine falcon survey conducted by the New Mexico Department of Game and Fish in 1980. Both aerial and ground surveys were run. The report concluded that the Florida Mountains do not provide suitable habitat for peregrine falcons.

## F. Visual

Two scenic quality rating units describe the Florida Mountains WSA. Most of the WSA, composed of the peaks and slopes of the mountains, has a Class A (high) rating. The higher elevations are characterized by steep, angular rock outcroppings with jagged, vertical intrusions dominating the highest peaks. A variety of reds and grays are the predominant landform colors. The vegetation is diverse in random irregular patterns. Low shrubs and grasses are dominant at the lower elevations, with dark green juniper



## FLORIDA MOUNTAINS

increasingly scattered in the higher elevations. Vegetation colors range from yellow to green.

The southern part of the WSA has a Class C, or low rating. This area is a flat to gently rolling alluvial plain. Coloration is typically light reddish brown. The vegetation is primarily grasses and low shrubs in muted greens and light browns. Unusually large barrel cacti are located in this part of the WSA.

Most of the WSA, approximately 18,336 acres, is within a Visual Resource Management (VRM) Class II area. Approximately 4,000 acres in the southern part of the WSA are in a VRM Class III.

### G. Cultural

There are two known prehistoric sites in the Florida Mountains WSA. They consist of a series of bedrock mortars and a fair sized campsite. The campsite is somewhat unusual due to its large size. There has been virtually no survey in this area and none in the higher elevations. The most likely areas for locating undiscovered sites are along the major drainages leading out of the mountains.

Historic use of the WSA has been limited to ranching, which left few remains, and mining. It is not known if any significant structures remain from this period.

### H. Air

Generally, the quality of air within the Florida Mountains WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



## III. EXISTING AND POTENTIAL USES

## A. Mineral Resources

The mineral resource potential of the Florida Mountains WSA is shown on Map 28-2. Approximately locations of mining claims and mineral leases are shown on Map 28-3.

## MINERAL RESOURCES POTENTIAL OF THE FLORIDA MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Uranium	Disseminated in plutonic rocks	Low	--
Oil and Gas	Relatively thin sequence of highly faulted Paleozoic and Mesozoic sediments	Low	--
Nonenergy Minerals			
Base and Precious Metals (Lead <sup>a</sup> /, Zinc <sup>a</sup> /, Copper <sup>a</sup> /, Silver <sup>a</sup> /, Gold, Molybdenum <sup>a</sup> /)	Veins and fracture fillings in dolomite, or less frequently in Tertiary volcanics or Precambrian intrusives	High Moderate Low	500 1,000 --
Fluorspar <sup>a</sup> /	Replacement deposits and breccia filling along fault zones in limestone and plutonic rocks	Moderate Low	400 --
Manganese <sup>a</sup> /	Veins, fracture fillings, and replacement pods in limestone and granite	Moderate	1,300
Barite	Veins in Tertiary sediments	Low	--
Magnesium	High magnesium dolomite	Low	--

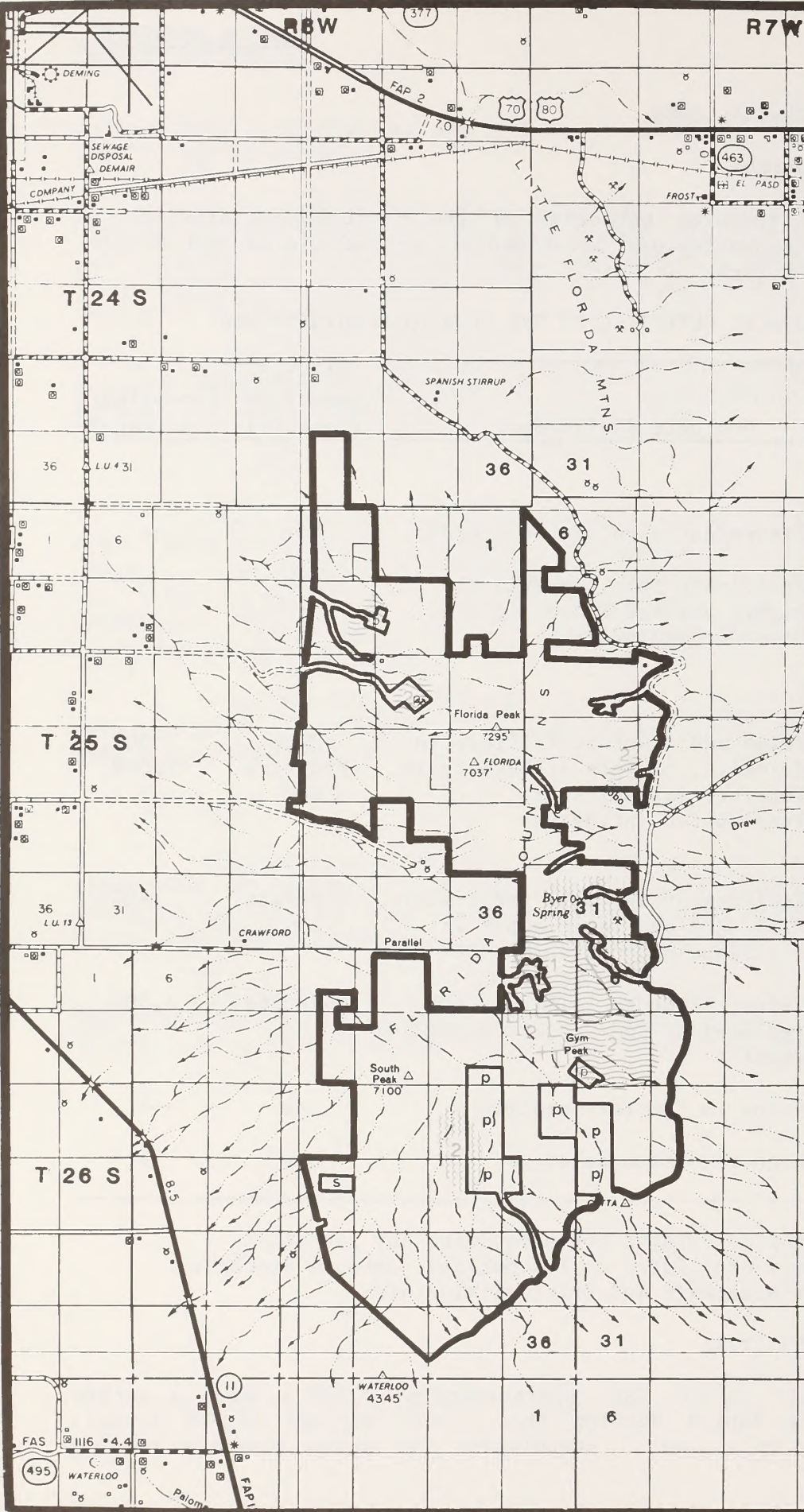
Notes: \*Acreage was not calculated for areas with low potential.

<sup>a</sup>/These minerals are listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.

## 1. Energy Minerals

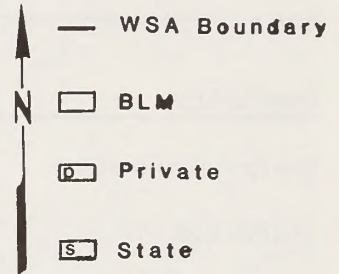
Over half of the WSA, approximately 12,338 acres, is within the Florida Mountains Raptor Nesting Area (total acreage 13,906 acres). This area is covered by a special stipulation for energy minerals leasing





# FLORIDA MTNS. WSA (NM-030-034)

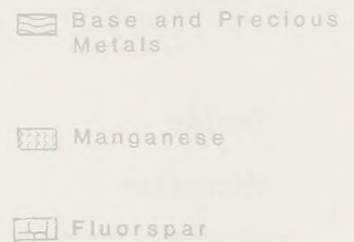
Proposed Action--No  
Action/No Wilderness  
Alternative



Scale: 1/2 inch=1 mile

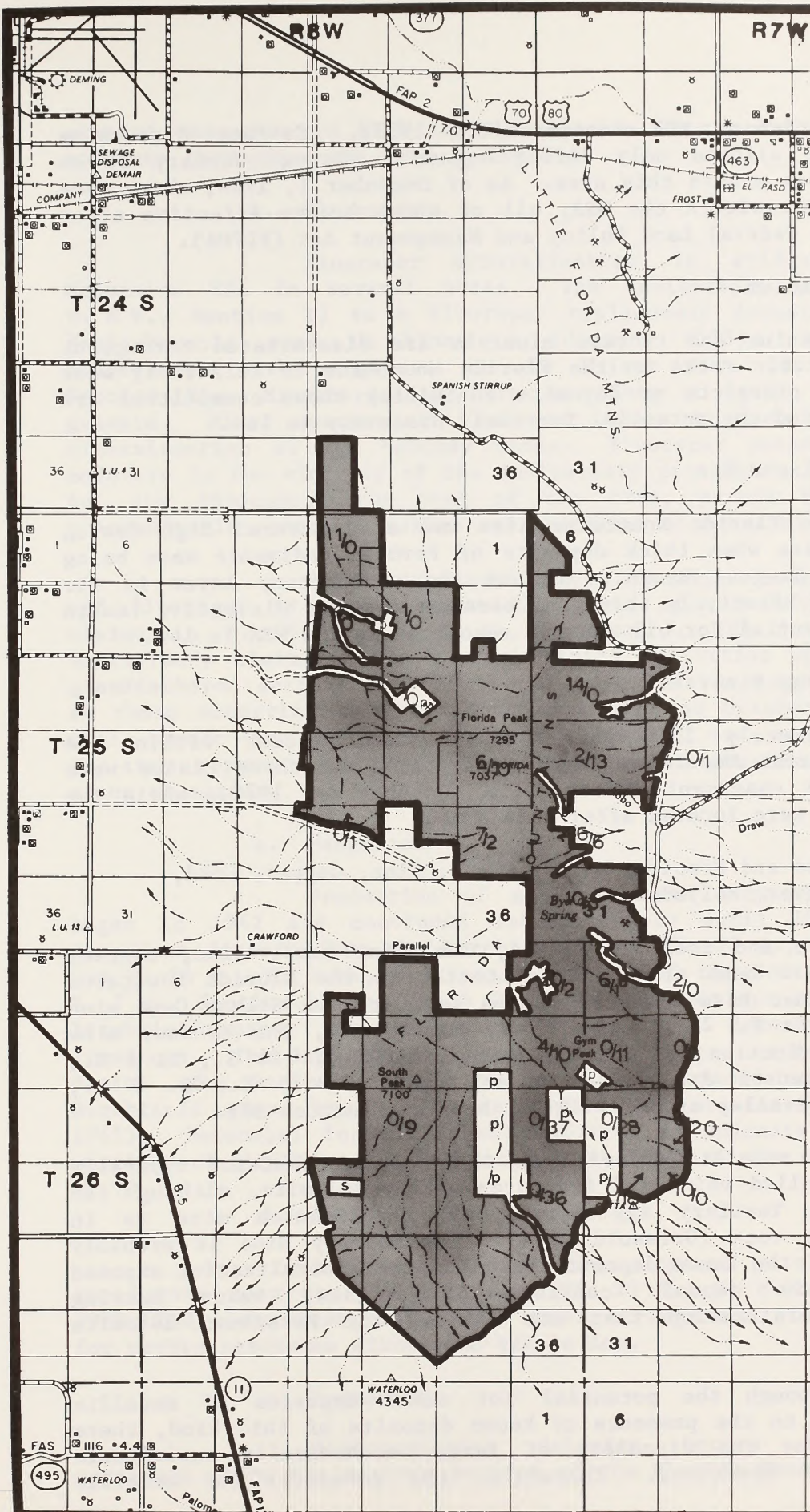
Source. USDI BLM, Las  
Cruces District, January  
1985

## MAP 28-2 MINERAL RESOURCE POTENTIAL\*



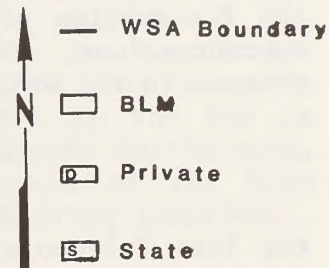
\*Areas of high (1) and moderate (2) mineral potential are shown for lands within the WSA; the potential may extend outside the WSA boundary. Areas of low potential are not shown.





# FLORIDA MTNS. WSA (NM-030-034)

Proposed Action--No  
Action/No Wilderness  
Alternative



Scale: 1/2 inch=1 mile

Source: USDI BLM, Las  
Cruces District, January  
1985

## MAP 28-3 MINING CLAIMS AND MINERAL LEASES

Pre-FLPMA Mining  
Claims per Section  
1/1  
Post-FLPMA Mining  
Claims per Section

Post-FLPMA Oil and  
Gas Leases

(Claim information from BLM  
records dated September 17,  
1984; claims which overlap  
more than one section are  
counted in each section in  
which they occur.)

FLPMA was passed October 21,  
1976.



## FLORIDA MOUNTAINS

(BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983). Surface disturbing activities would be allowed only during August 1 through January 31 on energy minerals leases within this area. As of December 1, 1984, there were 61 oil and gas leases within the WSA, all of which became effective after the enactment of the Federal Land Policy and Management Act (FLPMA).

### a. Uranium

Uranium and thorium minerals are disseminated throughout the Precambrian plutonic rocks in the Florida Mountains in relatively weak concentrations. No prospects or deposits containing these commodities are present in the WSA, and the potential for their discovery is low.

### b. Oil and Gas

The Florida Mountains area was a structural high during the late Paleozoic era when thick deposits of Permian sediments were being deposited in the Pedregosa Basin. Because the sedimentary layer in the Florida Mountains is relatively thin, and because numerous disruptive faults are present, the potential for oil and gas resources in the WSA is low.

## 2. Nonenergy Minerals

Approximately 257 mining claims are present within the boundary of the Florida Mountains WSA. Sixty-eight of these claims were located prior to the enactment of the FLPMA (October 21, 1976), while the remaining 189 claims were located after this date.

### a. Base and Precious Metals (Lead, Zinc, Copper, Gold, Silver, Molybdenum)

Base and precious metals, including lead, zinc, copper, gold, and silver, have been mined intermittently in the Florida Mountains since 1880. Mines that have produced in the past are the Silver Cave mine (2 patented claims in T. 25 S., R. 7 W., Section 7), the Mahoney mine (T. 26 S., R. 8 W., Section 1), the San Antonio mine (T. 25 S., R. 8 W., Section 10), the Stenson and Copper Queen mines (T. 25 S., R. 8 W., Section 14), and the Bradley mine (T. 25 S., R. 7 W., Section 18).

The metallic deposits in the Florida Mountains typically occur in fault-controlled veins and fractures within dolomite, although the Bradley mine is in Tertiary agglomerate and the Stenson mine is in Precambrian intrusive rock (Griswold 1974). The Mahoney Mine is probably the most promising of the known deposits based on the mineralization exposed in the area. This deposit consists of vertical veins bearing lead-zinc-copper mineralization that cut through the Fusselman dolomite (Griswold 1974).

Although the potential for small deposits of metallic minerals is high due to the presence of known deposits of this kind, there is less potential for the discovery of large, economically exploitable deposits of metallic resources. Therefore, the potential for metallic



mineral resources is high in the vicinity of the Mahoney mine and low to moderate throughout the rest of the WSA.

b. Fluorspar

Fluorspar mineralization is evident in the Florida Mountains WSA in several areas. The Anniversary prospect (T. 26 S., R. 8 W., Section 1) is a fluorspar replacement deposit associated with a fault-breccia zone in limestone (Clemons 1983). Fluorspar occurs in association with manganese at the Priser mine (T. 26 S., R. 8 W., Section 12). Mineralization here is along a fault zone in Precambrian granite. Minor amounts of fluorspar occur in association with metallic mineralization at the Mahoney mines. Fluorspar potential in the WSA is moderate in the vicinity of the Anniversary prospect and Copper Kettle mine, but low throughout the rest of the area, partly because of the high transportation costs to market and abundance of material in other locations.

Underground exploration by adit development for metallics and fluorspar is occurring on the group of pre-FLPMA unpatented mining claims in T. 26 S., R. 8 W., Section 1, SE $\frac{1}{4}$  (the Copper Ridge and Anniversary claims). The current mining activities were determined to be grandfathered activities because (a) they are the same types of activities as those occurring on this group of claims on October 21, 1976, (b) they will result in the same kinds of physical and aesthetic impacts, and (c) they represent a geographic extension of previous activities on this group of claims.

c. Manganese

Production of manganese ore from the Florida Mountains began in 1942 and continued intermittently until 1958. The two major manganese deposits are the Birchfield mine (T. 25 S., R. 7 W., Section 31) and T. 26 S., R. 7 W., Sections 5 and 6) and the Southside mine (T. 26 S., R. 7 W., Section 19 and T. 26 S., R. 8 W., Sections 16 and 21-24). At the Birchfield mine, ore occurs as replacement deposits within Paleozoic limestone. The deposits are irregular and appear to decrease in grade with depth. The Southside deposits occur along fault zones and, as in the Birchfield area, the ore grade appears to decrease with depth (Farnham 1961). Potential for manganese resources is moderate in the southeastern portions of the WSA and low throughout the rest of the area.

d. Barite

Barite of America, Inc., opened an exploratory drift adit for barite near the old Atir mine (T. 25 S., R. 8 W., Section 24) during 1979-1980, but encountered only small stringers of barite. The potential for barite resources within the WSA is low.

e. Magnesium

High-magnesium dolomite occurs in lower Paleozoic sediments along the western portion of the Florida Mountains in the vicinity



## FLORIDA MOUNTAINS

of Capitol Dome and Mahoney Park. According to Kottlowski (1957), there are more than a billion tons of dolomite with an average magnesium oxide content of 21.7 percent and insoluble residue content of 0.6 percent in the Mahoney Park area just west of the WSA. Potential in the WSA, however, is low, partly because the best high-magnesium dolomite is outside of the WSA boundaries and partly because of the abundance of more readily available magnesium oxide reserves in other parts of the country.

### B. Watershed

Water use within the Florida Mountains WSA is primarily by livestock and wildlife. There is one well facility, two wildlife guzzlers, two umbrella catchments, and six spring developments within the WSA. In addition, there are two undeveloped springs in the WSA. (See Chapter III, Livestock Grazing and Wildlife.) There are no water control structures or land treatments within the WSA.

Erosion hazard ranges from severe on the steep, rocky type soils that have rapid runoff to moderate on the alluvial fans. There are no watershed projects proposed in BLM's land use planning system for this area.

### C. Livestock Grazing

#### 1. Allotments

Parts of six grazing allotments are within the Florida Mountains WSA. Livestock use in parts of the Florida Mountains is limited due to steep slopes. Licensed grazing use on public land includes cattle and a few horses.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Nathan Crawford 2007	5,532	444	960	17%
Neal Crawford (Baker) 2008	5,277	516	418	8%
Gerald Greeman 2025	8,142	1,983	6,174	76%
Leo Koenig 2033	24,857	2,436	5,612	23%
May, Inc. 2035-2539	9,255	1,752	5,580	6%
Delia Perez 2041	7,416	552	3,592	48%
TOTAL			22,336	



## 2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
Gerald Greeman 2025	2 improved springs, trough interior fence	T. 25 S., R. 7 W., Sec. 31 2 miles
Leo Koenig 2033	windmill interior fence	T. 26 S., R. 7 W., Sec. 20 1½ miles
May, Inc. 2035-2539	improved spring	T. 25 S., R. 8 W., Sec. 12
	improved spring, trough, undeveloped spring	T. 25 S., R. 8 W., Sec. 14
	2 improved springs, troughs, undeveloped spring	T. 25 S., R. 8 W., Sec. 23
	interior fence	2 miles

## Boundary Fences:

Crawford 2007 and Crawford 2008	½ mile
Crawford 2007 and Perez 2041	¾ mile
Koenig 2033 and May 2035	1¾ miles
Greeman 2025 and Koenig 2033	½ mile
Greeman 2025 and May 2035	½ mile
Crawford 2008 and Koenig 2033	½ mile
Perez 2041 and Koenig 2033	3 miles
May 2035 and Crawford 2008	¾ mile

Note: <sup>a/</sup>Information shown in tables reflects Federal acres and animal unit months (AUMs), and rangeland developments on public land.

## 3. Potential Rangeland Developments

A pipeline and trough off of the existing well in T. 26 S., R. 7 W., Section 20, is proposed on the Leo Koenig allotment (2033) (BLM Las Cruces/Lordsburg MFP Amendment/EIS, 1983). Only about 1,000 feet of the proposed pipeline would be within the WSA since the well is just inside the southeast boundary of the WSA. The proposed pipeline would run due south from the well and the proposed trough would be located several miles outside the WSA boundary.

The location of this proposed rangeland development is tentative. The purpose of the pipeline and trough is not to accommodate increased livestock numbers, but to redistribute existing grazing use over the southern pasture of the Leo Koenig allotment (2033) and relieve grazing pressure around existing livestock waters.



D. Recreation

The Florida Mountains provide opportunities for hiking, climbing, and nature study. Hunting for quail, dove, and deer occurs in the area. Three limited permit Persian ibex hunts, trophy and nontrophy, are held in the Florida Mountains annually. Vehicle related recreation use occurs on the WSA boundary roads and the roads cherry-stemmed into the WSA.

The area is also visited by rockhounds. Rockhound State Park is 2 miles north of the WSA's northern boundary. In addition, Spring Canyon State Park (560 acres in T. 25 S., R. 8 W., Section 12) is adjacent to the north boundary of the WSA. Access into the Park was recently upgraded and plans for the Spring Canyon facility include more picnic tables, shelters, and the installation of electricity.

Visitor use information for the Florida Mountains WSA is unavailable.

The only BLM plan outlining specific management direction for recreation in the Florida Mountains is the Wildlife Habitat Management Plan (HMP). The HMP specifies that high intensity recreation sites should not be developed until after 1987. This recommendation is based on the opinion that high intensity use could be expected to increase ibex movements off the Florida Mountains into other habitats. After 1987, information will be available on ibex concentration areas and the potential for developed sites can be reevaluated.

E. Education/Research

A number of graduate students (Woodroof 1979; Sutcliffe 1972; Bavin 1975) from New Mexico State University and Colorado State University have conducted studies on the Persian ibex in the Florida Mountains. The area was included in the New Mexico Department of Game and Fish survey for peregrine falcon eyries in 1980.

Bill Isaacs, David C. Johnson, and J. S. Findley have conducted various plant surveys in the Florida Mountains. Corbitt and Woodward (1970) studied the thrust faults of the Florida Mountains and their regional tectonic significance.

F. Realty Actions

The New Mexico State Highway Department has a right-of-way (ROW) (NM-055609) for a material pit adjacent to the WSA boundary in T. 26 S., R. 8 W., Section 21, SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ . The Highway Department operates a gravel pit with a portable crushing and sizing system on the site.

The Columbus Electric Cooperative transmission line ROW (NM-016066) forms approximately 9 miles of the northwest, northeast, and southwest boundaries of the WSA.



On July 30, 1980, Barite of America was issued a 10-year ROW (NM-37536) for a 0.18 mile mine access road in T. 25 S., R. 7 W., Section 30, Lots 3 and 4, and T. 25 S., R. 8 W., Section 24, SE $\frac{1}{4}$ SE $\frac{1}{4}$ .

The Industrial Communications and Equipment Company was issued a ROW in February 1984 for a solar-powered radio repeater site and the existing cherry-stemmed access road in T. 26 S., R. 8 W., Section 1, SW $\frac{1}{4}$ NW $\frac{1}{4}$ . The 25-year ROW was issued with the stipulation that the ROW would be revoked and all improvements removed if the Florida Mountains were designated wilderness.

#### G. Wildlife

A HMP was completed for the Florida Mountains in 1979. The HMP is a joint plan between BLM and the New Mexico Department of Game and Fish (NMDGF). The objectives of the plan which apply to the WSA are:

1. to maintain or improve the condition of key forage species;
2. to protect vegetation and soil resources;
3. to improve distribution of reliable water sources for big game in the higher elevations;
4. by hunting and other control methods, to limit the ibex population to levels determined to be within the safe and proper carrying capacity of the habitat;
5. to continue additional studies of the ibex including annual census, population ecology, and distribution.

There are two quail guzzlers in the northwest part of the WSA in T. 25 S., R. 8 W., Section 3, SE $\frac{1}{4}$  and Section 23, SW $\frac{1}{4}$ . Two umbrella catchments have been installed at high elevations in T. 25 S., R. 8 W., Section 24, SE $\frac{1}{4}$ , and T. 26 S., R. 8 W., Section 10, NE $\frac{1}{4}$ . These catchments complete planned water development for the ibex.

The fire section of the HMP specifies that wildfires should be allowed to burn above the 6,200 foot level. This recommendation was not carried forward in a fire plan. However, the Las Cruces District portion of the Statewide fire plan is currently in preparation. The original recommendation from the HMP or a let-burn recommendation for the entire range will be carried forward in the Statewide fire plan.



IV. WILDERNESS CRITERIA

A. Evaluation of Wilderness Values

1. Quality of Mandatory Wilderness Characteristics

a. Naturalness

The apparent naturalness of the Florida Mountains WSA is affected by a variety of the imprints of man: wildlife waters, rangeland developments, vehicle trails and cherry-stemmed roads, and mining activity.

The two wildlife waters in the northwest part of the WSA are the guzzler type. They have a minimal impact on naturalness. The vehicle trails accessing the waters have a slightly greater impact on naturalness than the wildlife waters. There are two umbrella catchments, made of galvanized metal, within the WSA. They are located at high elevations north of Baldy Peak and north of South Peak. Access to these waters is on foot, by horseback, or by helicopter. They also have a minimal impact on naturalness.

Rangeland developments affecting the naturalness of the area include improved springs, fences, and cherry-stemmed well facilities. The 6 improved springs and approximately 13½ miles of fence in the WSA do not greatly impact naturalness. White Dome Well, Blue Water Well, and Victorio Well are all cherry-stemmed developments along the east side of the Florida Mountains. The facilities at these wells include windmills, storage tanks, drinking troughs, corrals, and loading chutes. The Victorio Well is outfitted with a gasoline powered pumpjack. These developments and the associated access roads, although cherry-stemmed, impact naturalness locally, especially in the areas northeast, east, and southeast of Baldy Peak.

Mining activity and the associated access have had the greatest impacts on the naturalness of the Florida Mountains WSA, especially in the northeast and east-central portions of the WSA. The Stub mine and Birchfield-Bradley mines are located in the northeast part of the WSA. The Stub mine consists of two shafts and is accessed by a 1½-mile-long jeep trail. The Birchfield-Bradley mine area and access road are cherry-stemmed. Two buildings, several junked vehicles, mine structures, two mine shafts, and prospect trenches, although within the cherry-stem, impact naturalness in this area.

Approximately 1 mile southwest of the Birchfield-Bradley mines are the Atir and Barite of America (BOA) mines. Several mine shafts, prospects, and the remains of old mine buildings are located in and around Lobo Draw. The access route up Lobo Draw is cherry-stemmed. The post-FLPMA BOA mine access road has the greatest impact on naturalness in this area; however, less than a mile (0.18 mile) of the road is on Federal land within the WSA. This portion of the road on Federal land is covered by a right-of-way and reclamation plan.



Mining impacts affect the quality of the apparent naturalness in the 3 square mile area north of Gym Peak. Several prospects and a mine shaft are located less than  $\frac{1}{2}$  mile north of Byer Spring in T. 25 S., R. 7 W., Section 31. The Birchfield manganese mines (San Tex mines) are located in T. 26 S., R. 7 W., Section 6, NE $\frac{1}{4}$  and T. 25 S., R. 7 W., Section 31, SW $\frac{1}{4}$ . The imprints of man in this area include approximately 20 prospects and open cuts, tailings piles, 2 inclined shafts, the remains of a headframe, and vehicle trails. The Mahoney mines in T. 26 S., R. 8 W., Section 1 are accessed by a cherry-stemmed road climbing the west side of the Florida Mountains from Mahoney Park. Although cherry-stemmed, tunnels, dumps, several vertical shafts, the remnants of loading facilities, and a stone cabin used by the miner impact the quality of naturalness in this area. Grandfathered mining activities are currently proceeding on the group of claims in this area (the Anniversary and Copper Ridge claims). About 600 feet of an existing vehicle trail was improved by clearing brush and light blasting, and an exploration adit is being driven. These activities impact the naturalness of the ridge running south from Baldy Peak and the upper reaches of Copper Kettle Canyon. The dump resulting from the new adit will be visible from parts of Victorio Canyon and Gym Peak.

Approximately 1 mile south of the Mahoney mines in Copper Kettle Canyon is the Priser mine. Imprints of man around this mine include an old cabin, a steel storage tank, two adits, and five prospects. The Silver Cave patented mine is approximately  $\frac{1}{2}$  mile southeast of the Priser mine. In addition to the mine shaft located on the patented inholding, there are about 10 prospects on the unpatented claims in the area. The surface disturbance associated with these old mines affects the apparent naturalness of the lower southern slopes of Gym Peak and Middle Copper Kettle Canyon.

A windmill, storage tank, and corrals are located about  $\frac{1}{2}$  mile inside the WSA boundary in T. 26 S., R. 7 W., Section 20, NE $\frac{1}{4}$ NW $\frac{1}{4}$ . These developments do not greatly affect apparent naturalness.

The southwest and southern parts of the WSA are the most natural. An area of approximately 3,000 acres in the rugged, mountainous southwest part of the WSA around South Peak is natural except for an umbrella catchment to the north-northwest of the Peak. Imprints affecting the alluvial fans and creosote flats  $1\frac{1}{2}$  miles south of South Peak include:  $3\frac{1}{2}$  miles of jeep trails, 4 miles of fence, the New Mexico State Highway Department's gravel pit (T. 26 S., R. 8 W., Section 21, SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$  which is adjacent to the WSA boundary), and the Columbus Electric Cooperative's transmission line, which forms the northwest, northeast, and southwest WSA boundaries.

The apparent naturalness of the northwest part of the WSA is impacted by three cherry-stemmed roads, two jeep trails, and evidence of past mining activity. Many of the mining impacts in this part of the WSA are on the cherry-stemmed Copper Queen and Capitol Dome patented mines. Mining imprints on the unpatented claims adjacent to Capitol Dome include six shafts, three adits, and several prospect pits.



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Overall, the Florida Mountains WSA generally appears natural. The quality of naturalness in parts of the WSA, however, are diminished by the cumulative impacts of rangeland developments and mining activity.



Overview of the Florida Mountains.

### b. Solitude

Portions of the Florida Mountains WSA provide outstanding opportunities for solitude. The large size of the WSA allows visitors to disperse and avoid the sights and sounds of others, and the rugged topography provides numerous secluded canyons and ridges. The highest quality opportunities for solitude are in the area around South Peak and in the north-central part of the WSA along the spine of the mountain. These areas are away from roads and other imprints of man.

The quality of opportunities for solitude along the east slopes of the Florida Mountains is somewhat diminished by cherry-stemmed roads to rangeland developments and past mining activity.



Opportunities for solitude are less than outstanding in the creosote flats in the southern part of the WSA and in the area southwest of the Copper Queen patented mine due to the lack of topographic and vegetative screening.

#### c. Primitive and Unconfined Recreation

The Florida Mountains WSA offers a variety of outstanding primitive recreational opportunities. The area is large enough to support a three or four day pack trip. Opportunities also exist for rock climbing, horseback riding, nature study, photography, and hunting.

The rugged mountain range, with its steep ridges and canyons, offers an excellent opportunity to use outdoor skills and to interact with a natural environment. Opportunities for primitive recreation are enhanced by the size of the WSA and the diversity of vegetation and topography found in the WSA.

The State and private lands adjacent to the central part of the WSA in and around Mahoney Park and Baldy Peak and in Box Canyon and Copper Kettle Canyon detract from the quality of opportunities for primitive recreation in the WSA. These non-Federal lands disrupt the topographic integrity of the area and limit destination points for visitors.

### 2. Special Features

The Florida Mountains WSA contains special ecological and scenic features.

The ecological features consist of vegetation values of scientific and educational interest. The plant species in the WSA are numerous and diverse. The WSA provides habitat for a Bureau sensitive plant species proposed for Federal listing and four plant species selected by the New Mexico State Heritage Program as special concern elements (see Chapter II, Vegetation). The Florida Mountains have outstanding scenic features with a Class A (high) scenic quality rating (see Chapter II, Visual).

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the area as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.



## FLORIDA MOUNTAINS

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	20,731
mesquite acacia savanna	1,289
Trans-Pecos shrub savanna	316

### b. Distance From Population Centers

The Florida Mountains WSA is approximately 2½ hours driving time from El Paso, Texas; 1½ hours from Las Cruces, New Mexico; 5½ hours from Albuquerque, New Mexico; 4½ hours from Tucson, Arizona; and 6½ hours from Phoenix, Arizona.

### B. Manageability

Both positive and negative factors affect the potential of the Florida Mountains WSA to be managed as wilderness: patented mines, existing mining claims, land status, and boundary configuration.

The manageability of the WSA is enhanced by Spring Canyon State Park which is contiguous to the north boundary of the WSA. The 560-acre park in T. 25 S., R. 8 W., Section 12, was originally acquired by Luna County through a Recreation and Public Purposes patent from the BLM in 1966 and can be used for public parks and recreation purposes only. The park is now under the jurisdiction of the State and development plans are underway. (See Chapter III, Recreation.)

Strategic and critical minerals are known to occur in the Florida Mountains and there has been production from mines in the area in the past. Future mineral activities in the Florida Mountains are both possible and unpredictable. The Copper Queen and Capitol Dome patented mines are cherry-stemmed out of the northwest part of the WSA, and the Silver Cave patented mine is an inholding of approximately 30 acres in the southeast part of the WSA. These mines are all in areas of moderate potential for metallic minerals. Mining activities at the patented mines could degrade wilderness values in the northwest or southeast parts of the WSA. Upgrading the existing jeep trail in T. 26 S., R. 7 W., Sections 7, 8, and 18, to provide better access to the Silver Cave mine inholding would also degrade wilderness values.

There are numerous mining claims within the Florida Mountains WSA. These claims affect the manageability of the WSA in two ways:

1. The FLPMA specifies that mining uses that existed on the date of approval of the Act may continue in the same manner and degree during the time that an area is under wilderness



review. Such mining uses are grandfathered and may continue even if the uses would impair wilderness suitability.

Mining activities are currently proceeding in the same manner and degree under the grandfather clause on the Anniversary and Copper Ridge groups of claims in the Mahoney mines area. These claims in T. 26 S., R. 8 W. cover most of Section 1 and parts of Section 12.

In addition, mining claimants may be recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976, and the claimant can show BLM that the claim continues to be supported by such a discovery. Valid existing rights convey a more liberal development standard than grandfathered rights in that activities on valid claims are not limited to the same manner and degree. When it is determined that the valid existing rights can be exercised only through activities that will impair wilderness suitability, the activities will be regulated only to prevent unnecessary and undue degradation.

If any of the pre-FLPMA claims in the Florida Mountains WSA which meet the above criteria for grandfathered activities or valid existing rights are developed, wilderness values could be degraded before the area is designated wilderness.

2. Once an area is designated wilderness, the provisions of the Wilderness Act of 1964 and the Wilderness Management Policy (WMP) (BLM 1981) apply. Under the Wilderness Act and the WMP, holders of mining claims validly established in an area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations, "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the valid existing rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, all wilderness values could continue to be degraded near mining operations after the area is designated wilderness.

The land status in the Florida Mountains also affects the manageability of the area as wilderness. The land status in this mountain range is a mosaic of State, private, and public lands. As a result, the WSA boundary is very convoluted. For example, fairly large parcels of private land are cherry-stemmed in Copper Kettle and Box Canyons in the south and southeast parts of the WSA. The subsurface mineral estate on these particular parcels is in Federal ownership. Split-estate parcels of this kind are also located adjacent to the WSA boundary in and around Windmill Canyon and Lobo Draw (T. 25 S., R. 7 W., Sections 18 and 30, respectively) and Lovers' Leap Canyon and Mahoney Park (T. 25 S., R. 8 W., Sections 12 and 26, respectively). These split-estate parcels represent manageability



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problems because of the parcels' proximity to areas with moderate mineral potential. The Federal Government has no regulatory authority for surface management of mining activities on private surface/Federal subsurface lands. Restrictions on surface disturbance and plans for reclamation would be totally dependent upon agreements reached between the private surface landowner and the mining claimant. Nonwilderness uses such as mining activity on these lands or the State land around Dragon Ridge and Baldy Peak (T. 25 S., R. 8 W., Sections 2 and 36 and T. 26 S., R. 8 W., Section 2, respectively) could degrade wilderness values in the WSA.

If the Florida Mountains WSA is designated wilderness, the lands legally described below should be considered for acquisition to enhance the area's manageability. Acquisition of the Silver Cave, Capitol Dome, and Copper Queen patented mines should also be considered (total 169.332 acres).

<u>Legal Description</u>	<u>Acres</u>
State Land	
T. 25 S., R. 8 W., Section 2, All	640
Section 36, All	640
T. 26 S., R. 8 W., Section 2, All	640
Section 3, N $\frac{1}{2}$ N $\frac{1}{2}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ , W $\frac{1}{2}$ W $\frac{1}{2}$	220
Section 4, NE $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$	240
Section 9, E $\frac{1}{2}$ W $\frac{1}{2}$	160
Section 16, All	640
Section 21, S $\frac{1}{2}$ NE $\frac{1}{4}$	80
TOTAL	3,260
Private Land (surface only)	
T. 25 S., R. 7 W., Section 18, Lots 1, 2, NE $\frac{1}{4}$ NW $\frac{1}{4}$	120
Section 30, Lots 1, 5, 6, 7, E $\frac{1}{2}$ W $\frac{1}{2}$ , E $\frac{1}{2}$	640
T. 25 S., R. 8 W., Section 26, NW $\frac{1}{4}$ , S $\frac{1}{2}$	480
Section 35, NW $\frac{1}{4}$	320
T. 26 S., R. 7 W., Section 18, S $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$	240
Section 19, NW $\frac{1}{4}$	160
T. 26 S., R. 8 W., Section 4, W $\frac{1}{2}$	320
Section 11, S $\frac{1}{2}$ SE $\frac{1}{4}$	80
Section 13, NE $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$	240
Section 14, E $\frac{1}{2}$	320
Section 23, NE $\frac{1}{4}$	160
Section 24, W $\frac{1}{2}$ NW $\frac{1}{4}$	80
TOTAL	3,160
Private Land (surface and subsurface)	
T. 25 S., R. 8 W., Section 35, NE $\frac{1}{4}$	160
GRAND TOTAL (including the patented mining claim acreage)	6,749.332



Because of the areas in the Florida Mountains with high and moderate mineral potential, the numerous mining claims in the WSA, and the land status and boundary configuration of the WSA, management of the Florida Mountains to preserve existing wilderness values in the long-term would be complicated. However, the area could be managed as wilderness.



## FLORIDA MOUNTAINS

### V. CONSULTATION AND COORDINATION

#### A. Public Involvement Overview

Since the beginning of the BLM wilderness review, the determination of wilderness characteristics in the Florida Mountains has been especially difficult and controversial.

After completion of the initial inventory, the BLM proposed in the April 1979 Wilderness Review New Mexico Situation Summaries that the Florida Mountains be dropped from further wilderness inventory. This recommendation was based on the rationale that, "The effects of numerous intrusions, abandoned and operating mines, roads in major areas, and utility lines result in a lack of naturalness in the area and a lack of outstanding opportunities... ."

During the public review of the Situation Summaries, many people disagreed with the BLM's original recommendation. More public comments were received on the Florida Mountains unit than any other unit in the Las Cruces District. The New Mexico Wilderness Review Initial Inventory Decision (BLM 1979) reflected the public sentiment: "Because of the comments received, a reasonable doubt exists that all or portions of the area may contain wilderness characteristics and the area will be intensively inventoried to confirm public comment."

Numerous roads were identified during the intensive inventory that divided the original inventory unit into smaller roadless areas. Four of these roadless areas are greater than 5,000 acres and were evaluated for their wilderness characteristics. The BLM judged that three of these roadless areas (identified as subunit NM-030-034B) lacked outstanding opportunities for solitude or primitive recreation and, therefore, did not meet the criteria for a WSA. However, one of these areas (subunit NM-030-034A in the central, mountainous portion of the unit) appeared to have at least minimum wilderness characteristics and BLM proposed in the New Mexico Wilderness Study Area Proposals (BLM 1980) that an area of 18,904 acres be designated as a WSA. Due to the subjectivity of this decision, heavy emphasis was given to public comments prior to, the formulation of a final decision.

During the ensuing public review period on the WSA Proposals, numerous public comments were received and the Florida Mountains unit again proved to be one of the more controversial areas. Many of the comments included photographs, road affidavits, and newspaper clippings. Forty-three personal letters supported WSA status for the Florida Mountains. Most of the personal letters favoring wilderness study supported the Florida Mountains primarily because of the area's supplemental values and outstanding opportunities for solitude and primitive recreation. Thirty-nine personal letters opposed WSA status primarily because of mining and grazing impacts on naturalness.

After a reevaluation of the Florida Mountains' wilderness characteristics based on public comments, additional field checks, and all



inventory information, BLM released the entire Florida Mountains unit from further wilderness review in the New Mexico Wilderness Study Area Decisions (BLM 1980). This decision was based on BLM's judgment that, "...the wilderness quality of the unit is negated by mining activity and grazing improvements. There are twenty-one known unpatented mining claims within the boundaries of the originally proposed WSA. Numerous prospect pits, tunnels, shafts, and mine dumps are associated with these claims. Range improvements within the originally proposed WSA or along its boundaries include windmills, troughs, pipelines, developed springs, corrals, fences, and dirt tanks. Additionally, the configuration of the area is very irregular due to a combination of corridor roads and land status." "...due to the cumulative effects of the impacts described above, the unit does not appear natural."

The BLM's decision to release the entire Florida Mountains unit (both subunits NM-030-034A and NM-030-034B) was subsequently protested by two parties. The State Director denied both protests and both parties appealed to the Interior Board of Land Appeals (IBLA). After reviewing the appeals, the IBLA ruled that "there is sufficient doubt as to the adequacy of BLM's assessment of the naturalness of subunit NM-030-034A and the record does not support BLM's conclusion, the BLM decision...must be set aside and the case remanded to BLM for reconsideration of the naturalness of that subunit. BLM's denial of (the) protest as to the remainder of the Florida Mountains unit is affirmed."

After reevaluation of the naturalness of subunit NM-030-034A as directed by the IBLA, BLM concluded that the area meets the minimum naturalness criterion for a WSA. The quality of the area's apparent naturalness is addressed in this report.

During the public comment period on the Las Cruces District Wilderness Supplemental Draft Environmental Assessment (BLM 1984), 36 personal letters were received indicating support for wilderness designation of the Florida Mountains WSA. Fifteen personal letters opposing wilderness designation were submitted.

Fourteen of the personal letters favoring wilderness designation for the area listed no supporting reasons. Most of the other letters favoring wilderness designation cited the area's basic wilderness characteristics as supporting reasons. Two comments specifically addressed BLM's evaluation of the quality of the WSA's naturalness. One commentator felt that the topography of the Florida Mountains mitigates the effects of rangeland developments and mining activity. Another commentator stated that because of the subjective nature of such an evaluation, the quality of an area's naturalness should not be used as a major rationale for dropping an area.

Several comments addressed BLM's evaluation of the Florida Mountains WSA's manageability and suggested additional alternatives. One comment stated that even though there may be problems associated with management of the area as wilderness, the law does not require that an area be easy to manage in order to qualify for wilderness. Other comments



## FLORIDA MOUNTAINS

suggested (a) eliminating the Mahoney Park/Byer Spring area and dividing the area into two WSAs of 7,000 acres in the northern part of the mountain range and 13,000 acres in the south or (b) including a partial wilderness alternative involving designation of the central core of the Florida Mountains as wilderness. Areas resulting from these alternatives would still have manageability problems due to mining claims, mineral potential, land status, and irregular boundary configuration.

Two comments addressed the need for an Area of Critical Environmental Concern (ACEC) in the Florida Mountains. One commentator felt that ACEC management should have been considered because of "(1) The nationally significant scenic quality" and "(2) An immediate need to stop barrel cactus theft." Another comment suggested designation of the southwest barrel cactus area as an ACEC.

Pro-wilderness comments on mineral resource conflicts generally reflected the attitudes that the Florida Mountains wilderness values outweigh mineral values and that the mineral potential was greatly exaggerated in the Draft Wilderness Analysis Report and EA.

Supporting reasons listed by those opposing wilderness designation of the Florida Mountains WSA generally reiterated BLM's rationale for recommending the area unsuitable for wilderness designation.

### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to water, soils, vegetation, wildlife, visual, cultural, air, recreation, realty actions, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



## SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Designation as an Area of Critical Environmental Concern (ACEC) for Visual Resources	Although the Florida Mountains meet the minimum required criteria for a potential ACEC for visual resources because they rate high in scenic quality and relative scarcity, the total scenic resource (the mountain range) contains a significant amount of acreage in non-Federal ownership. Since the land status patterns would significantly limit BLM's ability to protectively manage the total scenic resource, this alternative was not analyzed further.
Designation as an ACEC for the Southwestern Barrel Cactus	An ACEC for the southwestern barrel cactus would not be appropriate because the Florida Mountains do not meet the identification criteria as outlined in the <u>Areas of Critical Environmental Concern Policy and Guidance</u> (June 1980).
Amended Boundary	Two potential Amended Boundary Alternatives were raised: (1) eliminating the Mahoney Park/Byer Spring area and dividing the WSA into two WSAs of 7,000 acres in the north and 13,000 acres in the south and (2) a partial wilderness alternative involving designation of the central core of the Florida Mountains WSA. These Amended Boundary Alternatives were not analyzed because the areas within the amended boundaries would still have manageability and mineral resource conflicts.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Minerals	No significant impacts were identified because of low potential throughout the WSA for oil and gas and uranium.
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Action/No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

## Issues Selected for Detailed Analysis

Three issues of concern are identified for the Florida Mountains WSA: mineral potential, the quality of the WSA's wilderness values, and manageability. Portions of the WSA have moderate and high potential for base and precious metals, moderate potential for manganese, and moderate potential for fluor spar. Concerns regarding mineral potential include restrictions to mineral development under wilderness designation and the possibility that mineral deposits in the Florida Mountains are not economically exploitable.

The second issue is the quality of the WSA's wilderness values. This issue is based primarily on the effects of past mining activity, cherry-stemmed vehicle routes, and rangeland developments on the area's wilderness values.

Concerns over the area's manageability relate to land status and boundary configuration, existing mining claims, and mineral potential.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 22,336 acres of public land within the Florida Mountains WSA would be recommended suitable for wilderness designation. (See Map 28-1 for location of the WSA boundary.)

If designated wilderness, the existing uses and activities in the area and potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the existing natural values, outstanding opportunities for solitude and primitive recreation, and special ecological and scenic features in the area with long-term Congressional protection.

Exploration and development activities on valid mining claims in the WSA could result in degradation of wilderness values. The area's natural appearance and scenic features would be degraded by access roads and mine dumps. Opportunities for solitude and primitive recreation would be degraded by the increased presence of man and vehicles and higher noise levels. The impacts on wilderness values would probably be greatest in the area north of Gym Peak where most of the areas of high and moderate potential for base and precious metals, fluorspar, and manganese have been identified. The outside sights and sounds of nonwilderness uses, such as mining activities on the non-Federal surface lands cherry-stemmed in the WSA and adjacent to the WSA, could degrade wilderness values similarly.

Under this alternative, the impacts on wilderness values could be significant.

#### 2. Impacts to Nonenergy Minerals

Metallic minerals, fluorspar, and manganese are known to occur in and around the Florida Mountains WSA, and several mines in the northeast and southeast parts of the Florida Mountains are patented. Although portions of the WSA have high (500 acres) and moderate (1,000 acres) potential for base and precious metals, moderate potential for fluorspar (400 acres), and moderate potential for manganese (1,300 acres), there has been production in the past.

Under the All Wilderness Alternative, development work, extraction, and patenting of mining claims existing in the Florida Mountains WSA as of the date of designation would be allowed if the claims are determined to be valid. A mineral examination and subsequent mineral report must confirm that as of the date of designation, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a



reasonable prospect of success in developing a valuable mine. At the present time, there are numerous existing mining claims within the boundary of the WSA and on the private surface/Federal subsurface mineral estate cherry-stemmed in the southern and southeastern part of the WSA. Estimates as to the number or locations of claims that would prove to be valid are beyond the scope of this report, as are predictions of the impacts of mining activities on such claims; however, it is possible that some of the claims in the areas of high and moderate potential would prove to be valid.

Undue and unnecessary degradation of wilderness character would not be allowed, and the use of mechanical and motorized equipment would be authorized only if there are no reasonable alternatives. A Plan of Operations for mining on valid existing claims would include reclamation measures to provide for restoration as near as practicable of the surface of the land disturbed. However, during exploration or development activities, the mining companies could incur additional operating costs depending on restrictions on acceptable mining methods and the type and location of access.

It is assumed that no new exploration, prospecting, or location of additional mining claims would be allowed after wilderness designation. Mineral trends could not be followed outside of the existing valid claim boundaries. Full development of the mining district could not take place under this alternative. Most of the minerals known to occur in the area are on the list of strategic and critical minerals. Wilderness designation could have significant impacts on locatable mineral resources.

### 3. Impacts to Livestock Grazing

Motorized access on approximately 7 miles of vehicle trails within the designated wilderness would not be permitted. Checking livestock would be on foot or horseback.

The windmill on the Koenig allotment (2033) and two improved springs on the Greeman allotment (2025) would be the only rangeland developments in the area that would be denied their existing vehicular access through restriction on existing vehicle trails. Authorization for vehicular access or for the use of mechanized equipment to maintain these rangeland developments would be given only if there were no practical alternatives and would be on a permit basis.

The proposed pipeline and trough off of the existing well in T. 26 S., R. 7 W., Section 20 on the Leo Koenig allotment (2033) (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983) could be installed if it were determined through site-specific analysis to be necessary for the purpose of rangeland or wilderness protection. Road construction and motorized access along that portion of the pipeline within the designated wilderness (approximately 1,000 feet) would not be authorized. Since the proposed trough would be several miles away from the boundary of the designated wilderness, the existing forage utilization patterns within the wilderness area could be affected. The proposed trough would provide a source of water in addition to the existing well in Section 20 which would be inside the



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designated wilderness boundary. The additional water source could relieve grazing pressure around the existing well and more evenly distribute existing livestock grazing use.

The impacts to livestock operators would not be significant and would consist primarily of the minor inconveniences of securing permits.

### B. No Action/No Wilderness (Proposed Action)

Under the No Action/No Wilderness Alternative, the entire 22,336 acres of public land in the Florida Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

#### 1. Impacts to Wilderness Values

The wilderness values in the Florida Mountains WSA would not be provided with long-term Congressional protection. Management of the area as proposed in existing BLM land use plans would be subject to administrative change in the long-term.

The impacts of mining operations for locatable minerals on wilderness values within the area could be minimal to major depending on the extent and locations of the activities. Mining activities would be regulated to prevent unnecessary and undue degradation and reclamation, where reasonably practicable, would be required. However, the impacts of mining development and construction of required vehicular access could cause significant degradation of natural values and opportunities for solitude and primitive recreation. Construction of additional access could also partition the WSA into roadless areas less than 5,000 acres.

Unrestricted vehicle use on the existing trails and cherry-stemmed roads in the WSA by recreationists, grazing permittees, and miners would disrupt solitude in the vicinity of these trails and roads.

Under this alternative, the impacts to wilderness values could be significant in the long-term because protective management of the area would not be ensured through Congressional designation.

#### 2. Impacts to Minerals

There would be no impacts on nonenergy minerals under this alternative. Over the long-term, the WSA could be fully explored and prospected and additional mining claims could be located and developed. Such activities would be regulated under the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation to the land. There would be no economic benefits forgone under this alternative.



### 3. Impacts to Livestock Grazing

All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. The proposed pipeline and trough on the Leo Koenig allotment (2033) (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983) could be implemented without consideration of the constraints of the WMP. There would be no impacts to livestock grazing.







## APPENDIX 29

### GILA LOWER BOX WSA (NM-030-023)

#### I. GENERAL DESCRIPTION

##### A. Location

The Gila Lower Box Wilderness Study Area (WSA) is located 23 miles northwest of Lordsburg, New Mexico and 4 miles southeast of Virden, New Mexico.

The U.S. Geological Survey (USGS) topographic map covering the WSA is the Canador Peak, New Mexico quadrangle at the 15-minute scale.

##### B. Climate and Topography

The Gila Lower Box WSA is characterized by a semiarid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly greater than 12 inches. A wide variation in annual precipitation is characteristic of southern desert climates. More than half of the precipitation normally falls during July, August, and September from convective thundershowers that are commonly intense and of short duration. The winter precipitation is mainly from gentle-intensity frontal type storms that may produce some light snow; however, the snow seldom accumulates on the ground.

During the summer months, daytime temperatures may exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, the average monthly minimum temperature is in the low 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter, but local surface wind directions vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The WSA contains a portion of the Gila River and the Lower Box Canyon. This portion of the river displays many characteristics of a youthful stream. The most prominent characteristics are the steep canyon walls, numerous short canyons extending themselves by head cutting and developing valley systems, a general lack of floodplain development, and canyon sides which rise abruptly from near the river's edge.

Structural benches and erosional columns, or hoodoos, occur in various places along the river. The southern portion of the WSA contains gently rolling hills and the drainages into the Gila River.



C. Land Status

The WSA contains 8,555 acres of public land and 120 acres of private inholdings. The following lands are private inholdings within the WSA:

40 acres - T. 19 S., R. 20 W., Section 21: SE $\frac{1}{4}$ SE $\frac{1}{4}$

80 acres - T. 19 S., R. 20 W., Section 28: W $\frac{1}{2}$ NE $\frac{1}{4}$

(See Map 29-1 for land status within the WSA boundary.)

D. Access

Legal access to the WSA is available from the south by county roads to Fisherman's Point and Spring on the Bluff (see Map 29-1 for general locations of these areas). Further physical access is available by ranch and mine roads that run east from State Highway 82 and roughly parallel the WSA's northern boundary.



Aerial View of the Gila Lower Box WSA.



**MAP 24  
BLUE CREEK WSA  
(NM-030-026)**

**Proposed Action--No Action/  
No Wilderness Alternative**

**MAP 29  
GILA LOWER BOX WSA  
(NM-030-023)**

**Proposed Action--  
Amended Boundary**

- WSA Boundary
- Amended Boundary
- BLM
- Private
- State

State and private ownership  
is identified only inside  
the WSA boundary.

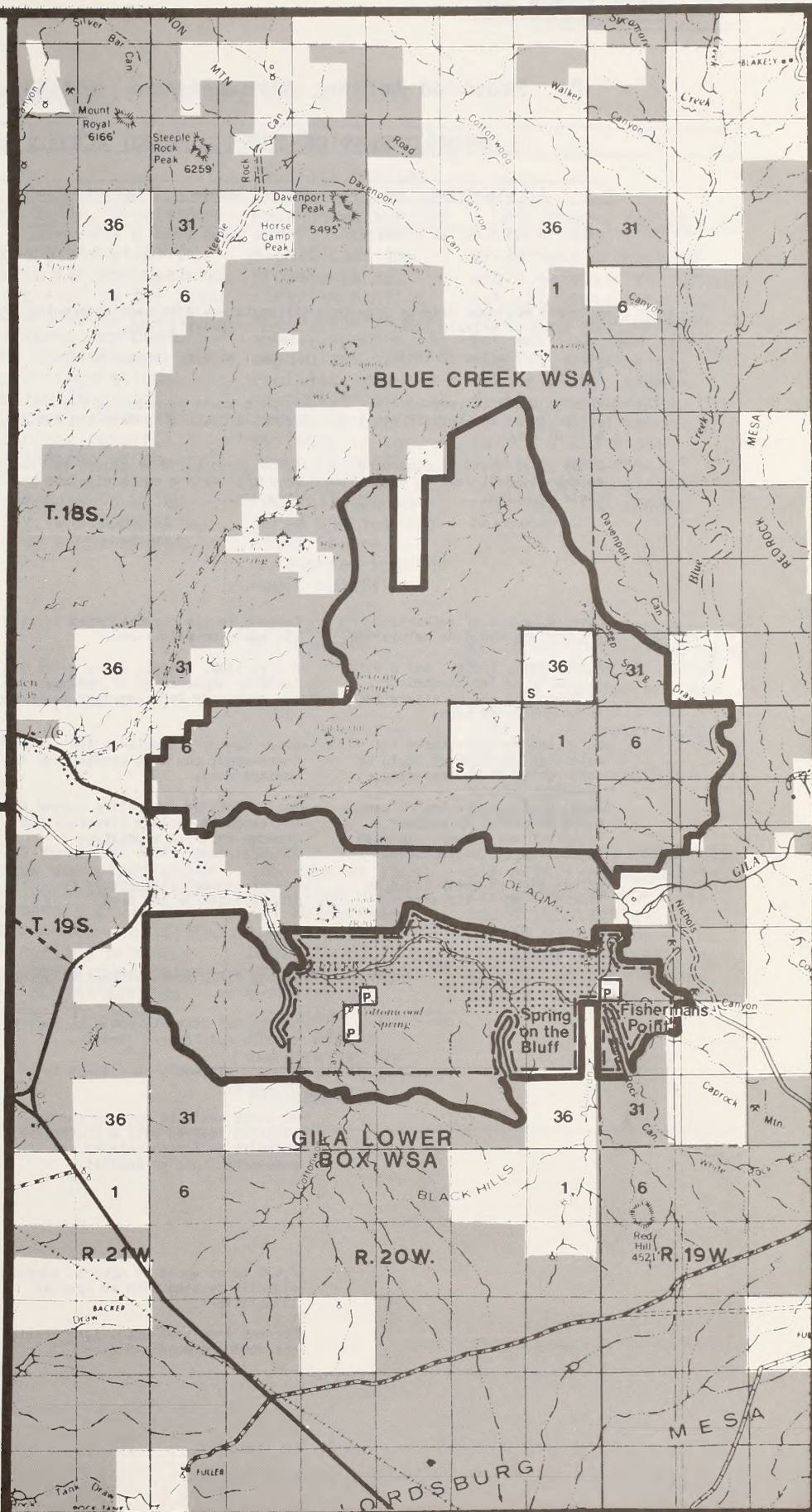
Scale: 1/2 Inch=1 mile

Source: USDI BLM, Las  
Cruces District, January  
1985

MAP 24-1  
MAP 29-1

**LAND STATUS**

- Gila Lower Box  
Riparian ACEC





## E. Proposed Action, Alternatives, and Issues

## DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	Amended Boundary (Proposed Action)	No Action/No Wilderness
°Manage 8,555 acres as wilderness.	°Manage 5,835 acres as wilderness.	°Manage 2,469 acres as an Area of Critical Environmental Concern (ACEC) without wilderness protection.
-Attempts would be made to acquire 320 acres of private land.	-Attempts would be made to acquire 320 acres of private land.	-Attempts would be made to acquire 320 acres of private land.
-Close 1 1/2 miles of vehicle trails.	-Close 1 mile of vehicle trails.	-Vehicle use would be restricted to designated roads.
-Permits would be required for vehicular access to maintain 1 mile of fence.	-Permits would be required for vehicular access to maintain 1 mile of fence.	
-8,555 acres would be closed to energy minerals leasing and mining claim location.	-5,835 acres would be closed to energy minerals leasing and mining claim location.	-2,469 acres would be open to energy minerals leasing with a No Surface Occupancy stipulation.  -2,469 acres would be segregated from all forms of appropriation under the public land laws, including the mining and material sale laws.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
-A dirt tank, fences, and a water gap could be implemented if nonimpairing and necessary for rangeland protection.	-A dirt tank, fences, and a water gap could be implemented if nonimpairing and necessary for rangeland protection.	-A dirt tank, fences, and a water gap could be implemented for livestock management.
-Water control structures for watershed improvement could be constructed if nonimpairing.	-Water control structures for watershed improvement could be constructed if nonimpairing.	-Water control structures for watershed improvement could be constructed.
-Small plots or the entire canyon could be fenced to exclude livestock and improve riparian vegetation, if nonimpairing.	-Small plots or the entire canyon could be fenced to exclude livestock and improve riparian vegetation if nonimpairing.	-Small plots or the entire canyon would be fenced to exclude livestock and improve riparian vegetation.
-Desert bighorn sheep could be transplanted in the area.	-Desert bighorn sheep could be transplanted in the area.	-Desert bighorn sheep could be transplanted in the area.  -Powersite withdrawals could be utilized for powersite facilities.
	°Manage 2,720 acres without wilderness protection.	°Manage 6,086 acres without wilderness protection.
	-No special attempts would be made to acquire non-Federal lands.	-No special attempts would be made to acquire non-Federal lands.
	-Vehicle use would be allowed to continue.	-Vehicle use would be allowed to continue.
	-90 acres would be open to energy minerals leasing with a protective stipulation for threatened or endangered species habitat.	-1,890 acres would be open to energy minerals leasing with a protective stipulation for threatened or endangered species habitat.
		-162 acres would be open to energy minerals leasing with a No Surface Occupancy stipulation.
	-2,630 acres would be open to energy minerals leasing with no special stipulations.	-4,034 acres would be open to energy minerals leasing with no special stipulations.
	-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues		
	Water, Soils, Vegetation	Wildlife Habitat and Threatened or Endangered Species	Wilderness Values
All Wilderness (8,555 acres)	Rangeland and wildlife projects (if nonimpairing and approved by the State Director) would result in significant improvement in the condition of the riparian vegetation, reduction in flood velocities, sediment load and surface runoff, stabilization of channel erosion and soils, improvements in water quality, and moderation of water temperatures.	Significant improvements in riparian habitat would benefit 67 mammal species, 12 amphibians, 54 reptiles, and the most diverse population of breeding avifauna in the lower Colorado drainage. Two Federally-endangered species and eight State-endangered species would benefit.	Wilderness protection would maintain the area's natural appearance, outstanding opportunities for solitude and hiking, camping, picnicking, nature study, sight-seeing, photography, bird hunting, bird watching, swimming and float boating, and special ecological, geological, cultural, and scenic features.
Amended Boundary (5,835 acres recommended suitable, 2,720 acres recommended nonsuitable) (Proposed Action)	Same as All Wilderness.	Same as All Wilderness.	Wilderness protection would maintain wilderness and supplemental values in that portion of the WSA with the highest quality characteristics for designation. Boundary adjustments would enhance manageability.
No Action/No Wilderness (2,469 acres managed as an ACEC, 6,086 no special management)	Impacts would be the same as those described under All Wilderness; however, the benefits could be greater because wildlife and rangeland projects would not be constrained by the BLM Wilderness Management Policy.	Impacts would be the same as those described under All Wilderness; however, the benefits could be greater because wildlife and rangeland projects would not be constrained by the BLM Wilderness Management Policy.	Portion of the WSA within the ACEC (approximately 29 percent of the WSA) would substantially retain wilderness characteristics as long as ACEC is administratively protected.



## II. EXISTING RESOURCES

### A. Geology

The oldest rocks exposed in the Gila Lower Box WSA are early Tertiary andesites consisting of andesite flows, flow-breccias, and localized andesite tuffs. Rhyolitic and latitic tuffs of the Datil formation overlie the Tertiary andesites and are interbedded with some tuffaceous sandstones and conglomerates. The cliffs of the Gila Lower Box are formed from tuffs of the Datil formation and the older andesites. Younger basaltic andesites and volcanic conglomerates are exposed in the southeastern part of the WSA. Quaternary sediments include the Gila formation, pediment and terrace gravels, and stream terrace gravels.

Faulting and jointing patterns in this area are predominantly northwest-trending. Some east-northeast faulting is also apparent.

### B. Water

The Gila Lower Box WSA is situated within the Gila River Basin which contributes to the larger Lower Colorado River Basin. The Gila River is a perennial stream with headwaters in the Gila National Forest to the northwest. Through the Gila Lower Box WSA, the river meanders generally westward with portions of the channel being narrow with steep side walls. Within the WSA, principal tributaries into the Gila River are ephemeral and include White Rock, Box, and Cottonwood Canyons. Average discharge of the Gila River through the Lower Box is around 134,000 acre-feet per year. Peak flows generally occur in mid-February and March from snowmelt in the upper reaches of the watershed. In February 1980, a peak discharge of 4,020 cubic feet per second (cfs) was measured just above the Lower Box, while the maximum discharge for 53 years of record was 58,700 cfs in 1978. Low daily flows between 20 and 40 cfs are common throughout the summer with occasional higher discharge following thundershowers.

Water quality standards for fecal coliform bacteria, dissolved oxygen, pH, and temperature have been established by the State of New Mexico for the main stem of the Gila River, from the New Mexico-Arizona border upstream to Redrock. The water, as measured at Redrock, meets the standards set forth by the State of New Mexico for designated uses of irrigation, limited warm water fisheries, livestock and wildlife watering, and secondary contact recreation. Several water quality parameters are above levels set for public drinking water by the State of New Mexico. Specifically, fluoride, iron, and arsenic have been measured at concentrations that exceed maximum contaminant levels.

Ground water is available in the alluvium and terrace gravels, and in the Gila Conglomerate, with lower yields expected in the volcanic rocks and interbedded bolson fill. Ground water movement is towards the Gila River and westward down the river valley. An ephemeral stream system contributes significantly to underground flow and recharge. Natural recharge occurs mainly as infiltration in the porous beds of streams and arroyos during periods of flood runoff. Water from alluvium and terrace



gravels generally contains less mineral substances than water in adjacent rock formations. Ground water quality in the area is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

Four different landforms, each with a different soil type, are found in the Gila Lower Box WSA.

In the bottom of the Gila Valley, the soils were deposited by the river and consist of stratified sands, silts, clays, and gravels. Surface textures range from silty clay loam to very gravelly sandy loam.

On the steep upland breaks into the Gila River, the soils formed in stratified old valley fill and commonly have a surface texture of very gravelly sandy loam. These soils have a high erosion hazard and contribute sediment to the river during periods of intense rain, which are common in the summer months.

In the southern portion of the WSA, on upland areas, the soils are deep and formed from igneous parent materials. Surface textures range from very gravelly loams to gravelly clay loams.

On the hills to the north of the Gila River, the soils are rocky and shallow and formed primarily from rhyolitic and basaltic parent materials. These soils typically have a surface texture of stony loam and are interspersed between numerous areas of rock outcropping.

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Gila Lower Box WSA consist of seven major types:

Vegetation Type	Range Site	Federal Acres
Grass	Hills	2,138
Creosote	Breaks	3,167
Mixed desert shrub	Loamy	2,583
Deciduous trees	River bottomland	454
Creosote	Gravelly	80
Creosote	Sandy	48
Creosote	Malpais (lava flow)	85

Grass species consisting of gramas, tobosa, bush muhly, threeawns, foxtail, and dropseeds are the dominant vegetation on the hills on both sides of the Gila River. A few scattered juniper trees are present along with the shrub species creosote, mesquite, and snakeweed.



Breaks, a highly erodable range site, occurs mainly along the south edge of the Gila River. Creosote is the dominant vegetation on the breaks. Other associated shrub species are snakeweed, mesquite, rabbitbrush, Mormon tea, yucca, mimosa, cacti, and a few scattered juniper trees. Grass species include bush muhly, black grama, tobosa, burro grass, fluffgrass, other gramas, and dropseeds.

Mixed desert shrubs are the dominant vegetation on the deeper loamy soils on the south side of the Gila River. Shrub vegetation is comprised of snakeweed, mesquite, cacti, yucca, mimosa, and creosote. Associated grass species are tobosa, threeawns, bush muhly, dropseeds, and black grama.

In contrast to the surrounding desert, the Gila River is the unique and dominant feature of this WSA because of important riparian vegetation. Vegetation, varied and diverse, is comprised of the deciduous cottonwoods, Arizona sycamores, Arizona walnuts, and willow trees. Grass species include bahia grass, Johnson grass, and Bermuda grass. Many different forbs and grasslikes occur in the bottomland. The river bottomland, though very productive, is in a very depleted state due to eroding soils and lack of vegetative cover.

Creosote is the dominant vegetation on gravelly, sandy, and malpais (lava rock) areas. Other associated shrub species are snakeweed, mesquite, yucca, and cacti. Grass species include tobosa, bush muhly, threeawns, gramas, cane bluestem, Arizona cottontop, and foxtail. Most of the grass species occur in the lava flow on the north side of the river.

## 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

## E. Wildlife

### 1. General

The Gila Lower Box WSA is extremely important for wildlife because it encompasses 587 acres of riparian habitat which supports the most diverse wildlife community of any habitat site. The upland portions of the



area are creosote or snakeweed. Although these two sites do not support a rich fauna by themselves, the combination of the different sites is valuable. Those animals which normally use the upland areas have a source of water with the river close by. Some wildlife associated with the river would use the upland areas for feeding. Raptors, in particular, nest and roost along the river, but hunt in the creosote and snakeweed sites where mammalian and reptilian prey densities are high (USDI, BLM 1979, 1981).

The Gila River is extremely valuable for wildlife because it extends through the Chihuahuan Desert into the Sonoran Desert in Arizona (and into Mexico via the Colorado River). To the north, it reaches the Mogollon Plateau. This makes the river a natural pathway for a great number of species. As a result, almost half the vertebrate species which occur in New Mexico can be found along the lower Gila River. Most of these species also are found in the WSA.

The Gila River Valley, including the WSA, is particularly well-known for its abundance and diversity of bird life. The breeding riparian avifauna of the Gila Valley is the richest of any in the lower Colorado drainage (Johnson, et al 1974) and probably of any in the Southwest. In addition, breeding densities of riparian birds appear to be comparable to those of the Verde Valley of Arizona, which are among the highest for any area in temperate North America. The Gila Valley also represents a highly significant breeding area for raptors (Johnson, et al op. cit.) and for peripheral species (Hubbard 1971).

In the lower Gila Valley, between Arizona and the Gila National Forest, 265 species of birds have been recorded. Of these, 144 were recorded in the summer. As many as 116 may breed there (Hubbard 1977). Most of these species can be found in the WSA. Of some interest is the fact that many birds reach a geographic limit at this section of the Gila River. Hubbard lists eight birds which are at their northern limits, five at their southern, and a number of others which are Sonoran or Mexican species.

Similar geographic distributions are exhibited with other wildlife. Sixty-seven mammal species can be found in or near the lower Gila Valley in New Mexico. About one-fourth of these are near their distributional limits; half of these are at their northern and half at their southern extensions. Twelve amphibians and 54 reptiles are found in or near this part of the river valley. About one-third of the amphibians and one-half the reptiles are at their distributional limits, and most of these are at their northern extensions. Again, most of these species can be found in the WSA (Hubbard 1977).

Some big game use the area. Mule deer numbers are low, but they are found in the WSA. Javelina populations are healthy. This species, too, is near its northern limits in the Gila River Valley.



## 2. Threatened or Endangered Fauna Species

The WSA has significant threatened or endangered species habitat. The peregrine falcon and the bald eagle, both Federally-endangered species, use the area but are not known to breed there.

Eight State-endangered species are found in this part of the river valley. The gray hawk is associated with riparian habitats. It is quite rare in New Mexico. Black hawks are also tied closely to riparian habitat. Two species which nest in the WSA are the Gila woodpecker and Bell's vireo. Gila monsters and narrow-headed garter snakes, two reptile species, have been seen in the WSA. There are two fish species, the spikedace and the loachminnow, which live in the shallower waters that are found in many parts of the WSA. These two species are also candidates for Federal listing.

The zone-tailed hawk has been identified as a special concern element by the New Mexico State Heritage Program because it reaches the northern limits of its distribution peripherally in New Mexico. This hawk nests in the WSA.

### F. Visual

The Gila Lower Box is composed of massive blocky outcrops which break into the steep walled canyon. The canyon is over 600 feet deep in places. In the eastern half of the canyon, the predominant colors are pinks and reds. The western half is composed of a much darker black/brown rock. Water in the river is usually slow moving and flat. Water color varies with the season, but is generally brown. Vegetation in the canyon is dense near the river. This vegetation includes all ages of trees, bushes, and numerous grass and cactus plants. Flowers can provide a striking visual contrast during the spring. The Gila Lower Box Canyon has a class A (high) scenic quality rating.

The land south of the canyon consists of rounded rolling hills with arroyos and canyons cutting toward the river. Vegetation is predominantly short bushes and isolated patches of grass and cacti. This part of the WSA has a Class B (moderate) scenic quality rating.

The WSA is in a Visual Resource Management (VRM) Class II.

### G. Cultural

The Gila Lower Box WSA contains several large petroglyph panels in the Mogollon style. While not as large as other petroglyph sites, they do contain significant information regarding the art styles and beliefs of the individuals who made them. A number of small rock shelters and rock structures are present throughout the WSA. They contain evidence of occupation and at least one granary. Low rock walls and mortar holes are associated with the rock shelters. The rock structures are significant in that such remains are very rare in this portion of the Southwest.



Site density should be high in the north part of the WSA along the south facing slopes of the Rimrock. There is a high probability that any major cave or rock shelter has a site.

#### H. Air

Generally, the quality of air within the Gila Lower Box WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

The locations of mining claims in the WSA are shown on Map 29-2.

##### 1. Energy Minerals (Geothermal Energy)

Two areas within the Gila Lower Box WSA are covered by special stipulations for energy minerals leasing (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983). (This document addressed energy minerals leasing, livestock grazing, and Areas of Critical Environmental Concern (ACECs).) The Gila River Lower Box Riparian ACEC is within the WSA. A No Surface Occupancy (NSO) stipulation would be attached to any energy minerals leases let within the ACEC. The boundary of the NSO area is drawn on legal subdivisions; therefore, the NSO area is slightly larger than the ACEC. The NSO area encompasses 2,631 acres. In addition, approximately 1,890 acres of the Gila River Riparian Areas are within the WSA and outside of the ACEC. Riparian areas along the Gila River are covered by a protective stipulation for threatened or endangered species habitat. There are no existing leases in the WSA.

Thermal springs once existed in the Lower Gila Box WSA area as evidenced by the presence of banded calcite and travertine deposits to the southeast of the WSA and within the eastern portion of the WSA; however, related volcanic activity does not appear to be recent enough to suggest the presence of geothermal resources. The potential for geothermal resources within the WSA is therefore low.

##### 2. Nonenergy Minerals

There are currently 3 unpatented mining claims recorded within the WSA. These claims were located after the passage of the Federal Land Policy and Management Act on October 21, 1976, and are referred to as "post-FLPMA" claims. Several 10 foot deep prospect pits have been dug on two of these claims in T. 19 S., R. 20 W., Section 26.

As noted above, the Gila River Lower Box Riparian ACEC is located wholly within the WSA. The special management requirements for the ACEC include segregation from the mining and material sale laws, but this segregation is not yet in effect. Once implemented, this segregation would virtually eliminate any possibility of mineral exploration and development.

##### a. Manganese

Manganese has been produced at several mines near the Gila Lower Box WSA, including the Consolation mine,  $\frac{1}{2}$  mile east of the WSA boundary (T. 19 S., R. 19 W., Section 20) and the Cliff Roy mine,  $1\frac{1}{2}$  miles southeast of the WSA boundary (T. 19 S., R. 19 W., Section 33). Another mine, the Black Bob, about  $\frac{1}{2}$  mile north of the WSA (T. 19 S., R. 20 W., Section 13) was developed but never produced. These deposits occur in



**MAP 24**  
**BLUE CREEK WSA**  
**(NM-030-026)**

Proposed Action--No Action/  
 No Wilderness Alternative

**MAP 29**  
**GILA LOWER BOX WSA**  
**(NM-030-023)**

Proposed Action--  
 Amended Boundary

- WSA Boundary
- Amended Boundary
- BLM
- ▢ Private
- ▣ State

State and private ownership  
 is identified only inside  
 the WSA boundary.

Scale: 1/2 Inch=1 mile

Source: USDI BLM, Las  
 Cruces District, January  
 1985

**MAP 29-2**

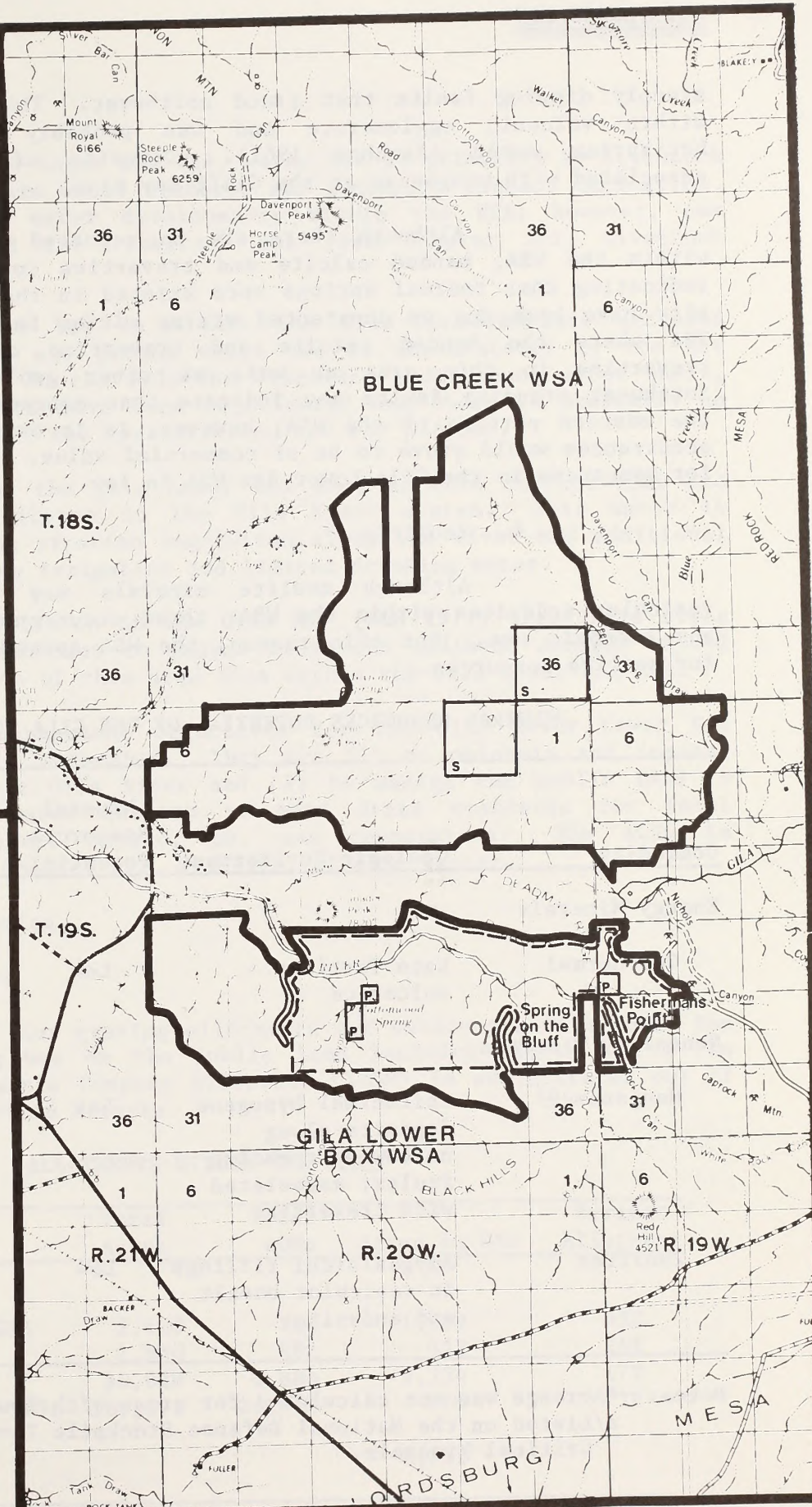
**MINING CLAIMS AND  
 MINERAL LEASES\***

- 1/1 { Pre-FLPMA Mining  
 Claims per Section  
 Post-FLPMA Mining  
 Claims per Section

(Claim information from BLM  
 records dated September 17,  
 1984; claims which overlap  
 more than one section are  
 counted in each section in  
 which they occur.)

FLPMA was passed October 21,  
 1976.

\*No mineral leases exist in  
 the WSA as of BLM records  
 dated December 1, 1984.





## GILA LOWER BOX

steeply dipping faults that trend northwest. The manganese is in shoots within volcanic agglomerate and was probably deposited by ascending hot-spring water (Farnham 1961). Deposits of banded travertine are associated with manganese at the Cliff Roy mine.

Although there are no reported occurrences of manganese within the WSA, banded calcite and travertine (onyx marble) are present, indicating that thermal springs once existed in the area. Several prospect pits have been dug on unpatented mining claims in the eastern part of the WSA where the banded calcite and travertine occur. The presence of travertine in this area as well as other geologic features including northwest trending faults may indicate that manganese deposits extend into the eastern portion of the WSA; however, it is unlikely that any manganese occurrences would prove to be of commercial value. Therefore, the potential for manganese in the Gila Lower Box WSA is low.

### b. Zeolites

Although zeolite minerals may occur as fillings in vesicular andesites within the WSA, these occurrences are not typically of any economic use. For this reason, the WSA appears to have low potential for zeolite resources.

### MINERAL RESOURCES POTENTIAL OF THE GILA LOWER BOX WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*	Approximate Acreage in Amended Boundary*
Energy Minerals				
Geothermal	Late Tertiary volcanics	Low	--	--
Nonenergy Minerals				
Manganese <sup>a/</sup>	Epithermal hypogene deposits along northwest trending faults; associated with travertine	Low	--	--
Zeolites	Amygdaloidal fillings in vesicular basalt and andesite	Low	--	--

Notes: \*Acreage was not calculated for areas with low potential.

<sup>a/</sup>Listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.



## B. Watershed

Within the Gila Lower Box WSA, water use is primarily by livestock and wildlife, limited warm water fishery, and secondary contact recreation. There are currently no water developments within the WSA; however, one development is proposed for livestock use (see Chapter III, Livestock Grazing).

The Gila Lower Box is within the Gila-San Francisco declared underground water basin and ground water use is administered by the New Mexico State Engineer. In the Gila-San Francisco underground water basin, all existing water rights have been adjudicated and there is presently no additional water available for appropriation for any purpose.

Water draining the Gila Lower Box WSA, as both surface flow and underground flow, contributes to the Gila River system. This water is important for sustaining riparian vegetation along the river and additional downstream uses including irrigation and limited drinking water.

A watershed decision in the Gila MFP (BLM 1977) identifies areas where water control structures to reduce flood and sediment damages should be considered. A portion of this area lies within the Gila Lower Box WSA.

Two of the management objectives for the Gila River Lower Box Riparian ACEC relate to watershed. They are (1) to maintain and improve channel stability of the Gila River and (2) to manage the public land to maintain and improve water quality to meet State standards for fecal coliform count, dissolved oxygen, pH, and temperature. The ACEC is discussed in detail in Chapter III, Wildlife, of this report.

## C. Livestock Grazing

## 1. Allotments

Parts of four grazing allotments are within the Gila Lower Box WSA. Licensed grazing use on the public land includes cattle and a few horses. The Lazy B Cattle Company allotment (5058) is administered out of the BLM Safford District in Arizona.

ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
J. R. and C. Donaldson 1016	2,400	288	1,989	83%
R. Johns 1076	1,650	288	423	26%
Caprock 1078	30,028	4,884	5,234	17%
Lazy B Cattle Co. 5058	109,070	24,905	909	1%
TOTAL			8,555	

Note: <sup>a/</sup>Information shown in the table reflects only Federal acres and animal unit months (AUMs).



## 2. Ranch Management

### Boundary Fences:

Caprock 1078 and Lazy B Cattle Co. 5058	1½ miles
Donaldson 1016 and Lazy B Cattle Co. 5058	1½ miles
Donaldson 1016 and Johns 1076	2½ miles

## 3. Potential Rangeland Developments

There is one dirt tank proposed on the Donaldson allotment (1016) in T. 19 S., R. 20 W., Section 28 (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1984). The location of this rangeland development is tentative. The purpose of the proposed dirt tank is not to accommodate increased livestock numbers, but to redistribute grazing use over the Donaldson allotment (1016) and relieve grazing pressure around existing livestock waters. The rangeland condition on presently heavily grazed areas of the allotment could show improvement in the long-term.

The entire 6 mile stretch of the Gila River within the Gila Lower Box WSA flows through the Caprock Mountain allotment (1078). Approximately 17 percent of the allotment is within the WSA, 17 percent is north of the WSA, and the remaining 66 percent of the allotment is south of the WSA. A Rangeland Improvement Justification Plan (RIJP) (BLM 1984) outlining overall management objectives and needed rangeland developments has been prepared for the Caprock Mountain allotment. The RIJP includes plans to divide the allotment, through fencing, into more evenly sized pastures and to create livestock waters in the southwest, south-central, east-central, central, and northern parts of the allotment where livestock waters are inadequate. The fencing and additional waters would keep livestock out of the bottom of the Gila River Canyon where they congregate for extended periods because of the availability of water and shade. Overall, these facilities would provide for more even utilization of forage over the entire allotment and facilitate more efficient livestock management. Proposed developments in or near the WSA include a pipeline and trough along the cherry-stemmed road to Spring on the Bluff (see Map 29-1) in T. 19 S., R. 20 W., Sections 26 and 35, and fencing along the north and south rims of the river canyon. The proposed fencing could consist of fences along the entire length of the rims or fences across only those drainages where livestock have access down to the river. A water gap would be required across the river in the area south of Canador Peak. The water gap would allow livestock access to the river for watering, but would prevent access into the canyon. The livestock would be forced to travel back up onto the river breaks and uplands to feed. Access to the Gila River for livestock watering is necessary because the river serves as a base water for the permittee's livestock operation. Control of base waters is required for grazing privileges on public land. The permittee cannot transfer his base water to other existing sources at the present time.

## D. Recreation

This area provides a variety of primitive recreation opportunities based on the Gila River and the Lower Box Canyon. A discussion of these opportunities is located in Chapter IV, Primitive and Unconfined Recreation.



The special management objectives of the Gila River Lower Box Riparian ACEC, as they relate to recreation, include the maintenance of recreation resources by preserving scenic values and preserving primitive recreation opportunities. The ACEC is discussed in detail in Chapter III, Wildlife, of this report.

#### E. Realty Actions

A portion of the Gila Lower Box WSA is withdrawn for use in connection with the San Carlos Indian Irrigation Project. The purpose of the withdrawal is watershed protection.

In addition, segments of the WSA are withdrawn for powersite reservations by Executive Order. These lands are currently being reviewed by the U.S. Geological Survey, Water Resources Division, to determine their importance for powersite locations. Those withdrawals found not feasible for powersites will be revoked.

The U.S. Geological Survey, Water Resources Division, was granted a temporary right-of-way for a new gauging station on the Gila River just inside the northeast boundary of the WSA. The right-of-way and gauging station conform with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1979). The station is part of a network of surface water gauging stations on the Gila River Basin. The base data collected at the gauging station consist of stream discharge measurements. The data are important for many hydrologic investigations, including flood flow frequency analysis.

#### F. Wildlife

There are no existing wildlife developments in the Gila Lower Box WSA, but several potential uses exist. The New Mexico Department of Game and Fish wants to look at the area intensively to determine the full potential for desert bighorn sheep. If it is suitable habitat, bighorn sheep could be transplanted in the future (Sandoval 1982).

The Gila MFP (BLM 1977) contains a number of decisions related to wildlife. These include BLM sponsorship of research for endangered species and javelina in the Gila River Valley, and preparation of a Habitat Management Plan (HMP) with emphasis on riparian vegetation and the wildlife dependent on it. The HMP is scheduled to be written in 1985. BLM has not yet sponsored research in the area.

An area of 2,469 acres totally within the Gila Lower Box WSA was proposed as the Gila River Lower Box Riparian ACEC and the impacts of designating the area analyzed in the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983) for energy minerals leasing, rangeland management, and ACECs. Approval of the plan in early 1984 constituted formal designation of the ACEC with the provision that if the Gila Lower Box WSA is designated wilderness by Congress, the ACEC designation would be cancelled without further planning action and the management objectives of the ACEC would be met through wilderness management.



## GILA LOWER BOX

The resources of the Gila Lower Box meet the two criteria required for an area to be identified as an ACEC: (1) the resources are "relevant" in that they include resources specifically listed in the definition of an ACEC in Section 103(a) of the Federal Land Policy and Management Act. The important resources in the Lower Box are cultural and scenic values, fish and wildlife resources, and important natural systems or processes, and (2) the resources are "important" because they have more than local significance.

The ACEC contains 6 miles of river valley with a temperate riparian deciduous forest vegetation type. Typical plant species are cottonwood, willow, and sycamore with an understory of shrubs such as mesquite, seepwillow, and various grasses and forbs. The thickest vegetation is in clumps near the river bottom. The vegetation community is in a dynamic state because of fluctuations in the water level. It has adapted to this, and the maintenance of the riparian vegetation depends on periodic flooding.

Riparian areas serve important hydrologic functions that are especially important in the arid Southwest. A good growth of riparian vegetation helps stabilize channel erosion. Riparian areas also serve as ground water recharge areas.

The Gila River and its major tributary, the San Francisco River, together with the tributaries of both, is the most important river system in New Mexico from a biological point of view. Zeller (1981) stated that the Gila System, in its present state in New Mexico, ranks high in comparison to any other systems in the southwestern United States.

The Gila River System extends into the Mogollon Plateau to the north, into the Chihuahuan Desert in western New Mexico, and through the Sonoran Desert in Arizona. There is also a great deal of influence from Mexico. As a result, a diverse wildlife community is found in the river valley. Although the ACEC is less than 1 percent of the Las Cruces/Lordsburg Resource Area, as many as half the wildlife species which occur in the State could be found in the ACEC.

The Heritage Conservation and Recreation Service prepared a Nationwide Rivers Inventory (National Park Service 1982) of rivers that might be eligible for wild, scenic, or recreational river status as outlined in the Wild and Scenic Rivers Act (Public Law 90-542, October 2, 1968). A 97-mile length of the Gila River extending from the Arizona-New Mexico border to the confluence of the East and West Forks within the Gila National Forest was identified in the Nationwide Inventory. This part of the Gila River is also included in the proposed New Mexico Rivers System. The Gila Lower Box ACEC is located in this segment of the Gila River.

In addition, the ACEC contains important scenic and cultural values. These values are described in Chapter II, Visual, and Chapter II, Cultural, respectively. As a result of the resources and values described above, the area provides primitive recreation opportunities unique to the region. Primitive recreation opportunities are discussed in Chapter IV, Primitive and Unconfined Recreation.



The management objectives of the Gila River Lower Box Riparian ACEC are:

1. to protect and improve riparian vegetation which provides habitat for nine Federal or State-listed endangered species, an avifauna which is one of the most diverse in the Southwest, equally diverse mammalian and reptilian communities which represent half the known mammals and reptiles in the State, and a warm water fisheries resource consisting of both native and non-native fishes;
2. to maintain and improve water quality at least to meet State standards for fecal coliform count, dissolved oxygen, pH, and temperature;
3. to maintain and improve channel stability;
4. to maintain the recreation and cultural resources by protecting and interpreting the petroglyph panels and rock shelters present in the area, preserving the scenic values, and preserving primitive recreation opportunities;
5. to allow livestock grazing to the extent that it is compatible with the other objectives.

The special management requirements of the ACEC include fencing small selected plots to protect riparian vegetation and restricting livestock use on the plots to allow reestablishment of bottomland species and improvement of ground cover. Six plots of approximately 5 acres each are to be fenced initially. One of the plots was fenced in the summer of 1984 but was washed away in the fall floods. The fencing meets the nonimpairment criteria outlined in the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1979). When a good growth of riparian vegetation within these plots has been achieved, the fencing will be removed and additional plots fenced. However, if the fencing of the north and south rims of the river canyon as proposed in the RIJP for the Caprock Mountain allotment (1078) (see Chapter III, Livestock Grazing) is authorized, the fencing of 5-acre plots would no longer be necessary.

No surface occupancy would be allowed for energy minerals activities and the ACEC would be segregated from all forms of appropriation under the public land laws, including the mining and material sale laws. Signs for interpretation of the cultural resources would be placed at the canyon entrance points and the area would be closed to off-road vehicle use. Primitive recreation sites would be located at both ends of the canyon and maps and brochures would be developed as needed.

The special management requirements of the ACEC also recommend acquisition of the following lands:



GILA LOWER BOX

<u>Legal Description</u>	<u>Acres</u>
T. 19 S., R. 19 W., Section 19: SW $\frac{1}{4}$ SW $\frac{1}{4}$	40
T. 19 S., R. 20 W., Section 21: SE $\frac{1}{4}$ SE $\frac{1}{4}$	40
Section 25: E $\frac{1}{2}$ E $\frac{1}{2}$	160
Section 28: W $\frac{1}{2}$ NE $\frac{1}{4}$	80
TOTAL	320



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

Overall, the Gila Lower Box WSA is virtually undisturbed by man. However, two impacts of man are located within the WSA. A vehicle trail approximately  $1\frac{1}{2}$  miles long provides access to the private land inholding in T. 19 S., R. 20 W., Section 21, SE $\frac{1}{4}$ SE $\frac{1}{4}$ . Two prospect pits approximately 10 feet deep are located on the mining claims in T. 19 S., R. 20 W., Section 26. Other impacts of man in the area include a few fences which do not detract from the WSA's natural appearance.

Both ends of the Gila Lower Box Canyon are minimally impacted by developments along the WSA boundary. The U.S. Geological Survey's (USGS) old gauging station is approximately 400 feet from the northeast boundary of the WSA. The USGS' new gauging station was painted to blend in with the surrounding landscape and does not impair the naturalness of the river canyon. A concrete dam which diverts water from the river into the nearby Sunset Ditch Company's irrigation canal is just outside the west boundary of the WSA.

The canyon of the Gila River appears natural. From the canyon, one can see views of Black Mountain, the Rimrock, and Canador Peak. All of these views are undisturbed by evidence of man's work.

##### b. Solitude

The Gila Lower Box WSA offers outstanding opportunities for solitude. The WSA is composed of two distinct types of topography; the rugged Gila Lower Box Canyon, Rimrock and side canyons, and the less rugged rolling upland hills to the south. These different types of topography have different potentials for solitude.

The Gila Lower Box and side canyons offer numerous secluded spots. In the canyons, visitors are surrounded by the works of nature. The feeling of solitude away from others and the work of man comes quickly in this environment. The entire Lower Box Canyon and side canyons provide outstanding opportunities of this type. The impacts caused by the USGS' old and new gauging stations or the ditches and canals outside the WSA disappear from view after rounding the river's first bend.

The rolling upland hills south of the Lower Box Canyon offer a different type of solitude. A visitor here has a longer view with fairly open and distant horizons. Traveling across the rolling hills, a visitor may occasionally encounter minimal evidence of man's work, such as fences. Since the hills have no topographic features to funnel visitors into a small area, groups would generally fan out into different areas. Interaction with other groups would be unlikely.





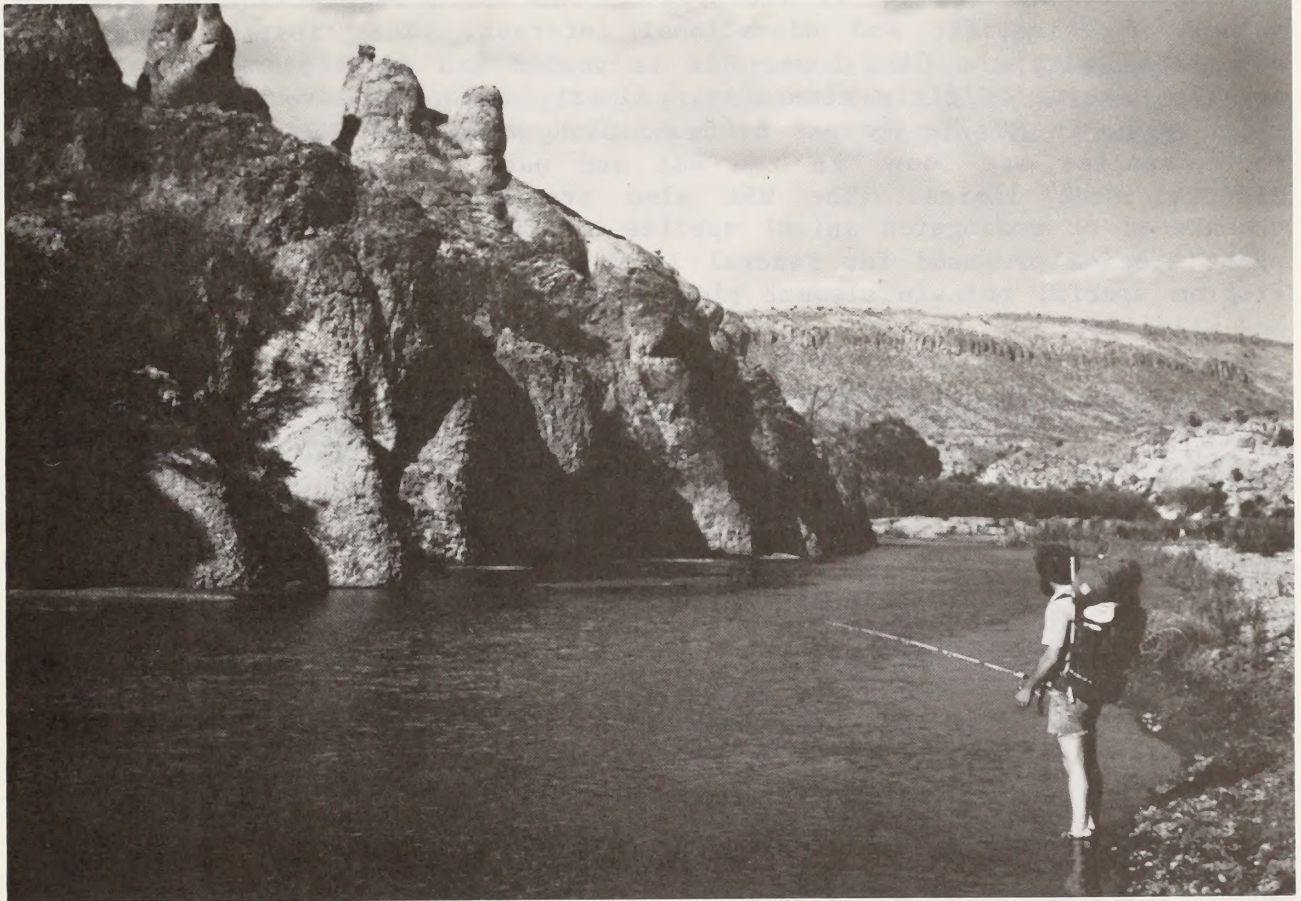
Side canyons of the Gila Lower Box offer numerous opportunities for solitude.

The potential for solitude in that portion of the WSA which is west of the cherry-stemmed road in T. 19 S., R. 20 W., Sections 20 and 29 is impacted somewhat by the sights and sounds of Highway 82 and the farming along the Gila River. Noise from the highway may enter the western edges of this portion of the WSA.



## c. Primitive and Unconfined Recreation

The Gila Lower Box WSA offers outstanding opportunities for primitive and unconfined recreation. The combination of the desert scenery, riparian vegetation, wildlife diversity, and cultural values within the canyon provides a recreational opportunity unique in the region. Any primitive activity is enhanced by this variety of resources. Specific recreational opportunities include hiking, camping, picnicking, nature study, sightseeing, photography, bird hunting, bird watching, swimming, and during the spring runoff, floating the river with rafts, canoes, or kayaks.



Fishing on the Gila River.

The location and topography of the WSA improves opportunities for recreation. Vehicular access at the ends of the canyon and at Spring on the Bluff and Fisherman's Point allows the user to choose the desired hiking distance. (See Map 29-1 for general locations of these areas.) Users may park at any number of access points and hike into the canyon. Trips can vary from short day hikes to overnight trips of different lengths. The combination of several access points and numerous side canyons allows variety and diversity in each visit to the area.



## GILA LOWER BOX

The Gila Lower Box offers a unique variety and quality of recreational opportunities within a publicly accessible area. These opportunities are truly outstanding because of both the quality and the diversity of opportunities within a pristine environment.

### 2. Special Features

The Gila Lower Box WSA contains special ecological, geological, cultural, and scenic features.

The ecological features include both vegetation and wildlife values of scientific and educational interest. The riparian vegetation associated with the Gila Lower Box is varied and diverse and supports an equally diverse wildlife community. Almost half of the vertebrate species which occur in New Mexico can be found along the lower Gila River. Most of these species are found in the WSA and many are near their geographic distributional limits. The WSA also provides significant habitat for threatened or endangered animal species and habitat for a Bureau sensitive plant species proposed for Federal listing and a New Mexico State Heritage Program special concern element plant species. (See Chapter II, Vegetation and Wildlife.)



Erosional columns, called Hoodoos, add geologic interest to the WSA's scenery.



The special geological features of the WSA are of educational value. The Lower Box portion of the Gila River displays many of the characteristics of a youthful stream (see Chapter I, Climate and Topography).

The special cultural features in the WSA include several large petroglyph panels and a number of rock shelters and rock structures (see Chapter II, Cultural). The Gila Lower Box WSA also has outstanding scenic features. The Lower Box Canyon has a Class A (high) scenic quality rating (see Chapter II, Visual).

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the area as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	2,138
creosote	3,380
Trans-Pecos shrub savanna	2,583
northern flood plain forest	454

#### b. Distance From Population Centers

The WSA is approximately 3 hours driving time from Las Cruces, New Mexico; 6 hours from Albuquerque, New Mexico; 4 hours from El Paso, Texas; 4 hours from Tucson, Arizona; and 6 hours from Phoenix, Arizona.

### B. Manageability

Several factors could affect the wilderness manageability of the Gila Lower Box WSA: private inholdings and private land adjacent to the WSA boundary, withdrawals, and mining claims.

There are 120 acres of private inholdings in the Gila Lower Box WSA. The 40 acres of private land in T. 19 S., R 20 W., Section 21 are used



as a salting ground by the owner. A primitive vehicle trail provides the existing access to the private inholding. The vehicle route is located so that it crosses several steep arroyos near the south boundary of the WSA. These arroyos occasionally flood and wash out the route so that vehicle passage is difficult or impossible. This access route and the current use of the parcel does not significantly affect the wilderness values of the WSA. However, occasional maintenance of the washed out crossings may be necessary if existing vehicular access is to be maintained. Development of the existing primitive route into a high standard road could impact wilderness values since additional vehicular access into the center of the WSA could reduce visitor management options, increase noise, and slightly reduce the local area's apparent naturalness. However, at the present time, upgrading of the route does not appear likely or necessary for the existing use.

There is no vehicular access to the 80-acre private inholding in Cottonwood Canyon. Existing use of the spring on this inholding for watering of livestock would not affect the wilderness manageability of the Gila Lower Box WSA.

The Gila River passes through the private land adjacent to the WSA in T. 19 S., R. 19 W., Section 19, and T. 19 S., R. 20 W., Section 25. This parcel of private land also includes one of the more interesting south-cutting side canyons, Box Canyon. Box Canyon is over a mile long and contains cultural, wildlife, and recreational values. Visitors in this portion of the Gila Lower Box could inadvertently trespass on the private land to cross the river or explore the side canyon.

The following 320 acres of private land within and adjacent to the WSA boundary should have a high priority for acquisition if the area is designated wilderness:

T. 19 S., R. 19 W., Section 19: SW $\frac{1}{4}$ SW $\frac{1}{4}$   
T. 19 S., R. 20 W., Section 21: SE $\frac{1}{4}$ SE $\frac{1}{4}$   
Section 25: E $\frac{1}{2}$ E $\frac{1}{2}$   
Section 28: W $\frac{1}{2}$ NE $\frac{1}{4}$

The acquisition of these lands would eliminate manageability problems associated with the impacts of nonwilderness uses, construction or upgrading of access, and inadvertent trespass of wilderness users onto the private land. In addition, these lands contain wildlife and cultural values and acquisition would enhance the special features of the WSA as well as opportunities for solitude and primitive recreation.

The San Carlos Indian Irrigation Project and other powersite withdrawals are within the WSA. The San Carlos Indian Irrigation Project withdrawals do not pose a manageability problem. The management restrictions of wilderness would not conflict with the purpose of this withdrawal, which is watershed protection. The potential uses of the approximately 4,760 acres under powersite withdrawal along the banks of the Gila River and within the WSA boundary do not pose a manageability problem, but rather a resource conflict. It is highly unlikely that the area would



be designated wilderness before the powersite withdrawal issue is settled. It is assumed that the issue of powersite development versus wilderness would either be settled administratively by a revocation of the withdrawals before the matter reaches Congress, or the matter will be settled by Congress as it decides whether the parcels will be dedicated to wilderness or power development.

There are three mining claims within the Gila Lower Box WSA. These claims could affect the manageability of the WSA as follows.

Once an area is designated wilderness, the provisions of the Wilderness Management Policy (WMP) (BLM 1981) apply. Under the WMP, holders of mining claims validly established in the area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations "Surface Management of Public Lands Under U.S. Mining Laws." To verify that a claim is valid, a minerals examination and subsequent minerals report must be prepared. The minerals examination and report must confirm that as of the date of wilderness designation, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a reasonable prospect of success in developing a valuable mine. Although exercise of the rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, there is a possibility that the wilderness values of the WSA could be degraded after the area is designated wilderness.

The likelihood of extensive development on these claims is remote since the mineral potential of the WSA is low.

The southern boundary of the WSA is located along a vehicle trail. The trail is revegetating and cannot be located in places where the natural rehabilitation is nearing completion. This makes it difficult to locate the WSA boundary on the ground and also complicates legal description of the WSA boundary. Location of the wilderness boundary along a legally describable line would simplify legal description of the wilderness area as well as the identification of the wilderness boundary on-the-ground.

The Gila Lower Box WSA could be managed to preserve its wilderness character. The highest quality wilderness values in the WSA are concentrated in the Lower Box and its side canyons. These values revolve around the Gila River and the associated riparian vegetation. Special features and values in the WSA include wildlife, cultural sites, and opportunities for solitude and recreation. All of these values and special features could be preserved on a sustained yield basis over the long-term under wilderness management.



## V. CONSULTATION AND COORDINATION

### A. Public Involvement Overview

Numerous public comments were received on the Gila Lower Box unit during the public review periods on the BLM New Mexico Wilderness Review Initial Inventory Decisions (July 1979) and the BLM New Mexico Wilderness Study Area Proposals (March 1980).

This WSA was one of the ten most discussed units during the comment period on the WSA Proposals. The majority of personal letters supported WSA status for the area. Most of the letters favoring WSA status for the area stated that the area offers outstanding opportunities for solitude and primitive types of recreation and cited the supplemental value of the petroglyphs, threatened or endangered species, and especially the unique values of a large natural riparian area in a desert setting.

Letters opposed to the WSA status of the area primarily cited resource conflicts such as mining, powerlines, recreational use, and ranching activities. Some of these comments contained maps, photographs of developments in and around the WSA, and a list of mining claims.

Changes from the BLM's original proposed WSA boundary resulted from public comments on private inholdings and topographic boundaries. As a result of these comments, errors in the location and extent of private inholdings were corrected and the northern boundary of the WSA was moved south to the edge of the Rimrock. All of these comments were retained and reviewed during the wilderness study.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (DEA) (BLM 1983), 32 public inputs were received on the Gila Lower Box WSA. Six of the inputs expressed opposition to wilderness designation. Most of the opposing comments cited the oil and gas and mineral potential of the area as reasons for opposing wilderness designation. Asarco expressed the opinion that undiscovered minerals might be found if the area were left open to exploration. Two industry respondents, Union Molycorp, Inc., and the Minerals Exploration Coalition, favored further reduction in the size of the area recommended suitable for wilderness to exclude existing mining claims and areas along the eastern margin that demonstrate favorable mineral potential. One comment questioned the wisdom of using public funds to acquire private land to enhance the wilderness area. The comment indicated that such acquisition amounts to buying wilderness areas.

The Phelps Dodge Corporation cited roads and mining claims in the WSA and expressed the opinion that the value of the ranch would be lowered and the livelihood of the rancher endangered by wilderness designation. Phelps Dodge speculated that wilderness designation could delay Silver City and vicinity citizens' attempts to acquire "sufficient water for simple existence in that area." Another Phelps Dodge comment stated that, "...the BLM Las Cruces District Advisory Council,...has recommended against the wilderness area in a meeting in Lordsburg. The Council's recommendation is that...the river be named an ACEC."



The New Mexico Department of Agriculture expressed the opinion that, "...the special designation as an ACEC would be adequate in protecting the outstanding qualities...without completely removing the availability of certain range improvement techniques which would enhance the resources (i.e., wildlife habitat, vegetation, etc.)."

The majority of the inputs, 26 personal letters, favored wilderness designation for the Gila Lower Box WSA. One petition with fifteen signatures was also received. Two of the personal letters and the petition listed no reasons for supporting wilderness designation.

Many of the comments favoring wilderness designation for the Gila Lower Box reiterated the supporting reasons cited in previous comment periods (see second paragraph in this chapter). Additional comments stressed the importance of protecting what little Sonoran habitat there is in New Mexico and the remaining undisturbed riparian habitat in New Mexico. Additional supporting reasons cited the area's naturalness and scenic values.

Taking into account other forms of protection and other areas that could possibly represent the biological communities involved, the New Mexico Natural History Institute ranked the Gila Lower Box the number one priority for wilderness designation out of the nine areas discussed in the DEA in terms of natural area planning.

Fourteen of the pro-wilderness letters favored the All Wilderness Alternative over the Amended Boundary Alternative. Several of these letters included reasons for favoring the All Wilderness Alternative. One comment stated that the excluded area is natural, would add diversity to the designated wilderness, and would protect the west part of the river. The comment added that less high quality wilderness values is an inappropriate reason for boundary adjustments. Another respondent speculated that designation of the area within the amended boundary would allow future encroachment of developments around the wilderness periphery that might impact wilderness values. One comment indicated that the minor benefits of the Amended Boundary Alternative do not justify exclusion of over 3/10 of the WSA from the area recommended suitable.

Miscellaneous supporting reasons and comments included: the area is manageable, resource conflicts are not significant, and the majority of the public supports wilderness designation. One comment also indicated support for the ACEC and another agreed that the private inholdings in Cottonwood Canyon should be acquired.

## B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to minerals, visual, cultural, air, recreation, realty actions, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
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An Alternative that Includes a Different Amended Boundary	Additional amended boundary alternatives were not analyzed because the amended boundary developed by BLM encompasses the area of highest quality wilderness values and mitigates manageability conflicts.
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Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
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Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.
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Alternatives Selected for Detailed Analysis	Reasons
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All Wilderness	Required by the BLM Wilderness Study Policy.
Amended Boundary (Proposed Action)	This alternative was evaluated because it includes the area of highest quality wilderness and supplemental values and greatest manageability.
No Action/No Wilderness	Required by the BLM Wilderness Study Policy.

Issues Selected for Detailed Analysis
---------------------------------------

The primary issues identified in initial scoping activities for this WSA are the quality of the wilderness values and the significance and quality of the area's special features. The area's special features include cultural, scenic, and wildlife values, threatened or endangered species, and riparian habitat.

An additional issue identified in public comments on the Draft EA concerns wilderness designation versus management as an ACEC. This issue concerns the differences in methods and tools allowed to manage the area's riparian habitat and the resulting impacts to wildlife habitat, threatened or endangered wildlife species, water, soils, and vegetation under the two alternative designations. Since significant benefits could occur to water, soils, vegetation, and wildlife under any of the alternatives, these issues will be addressed.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 8,555 acres of public land within the Gila Lower Box WSA would be recommended suitable for wilderness designation. (See Map 29-1 for location of WSA boundary.)

If designated wilderness, the existing uses and activities in the area and potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the BLM's Wilderness Management Policy (WMP) (1981). Upon designation of the Gila Lower Box WSA as wilderness, the 2,469 acre Gila River Lower Box Riparian ACEC would be cancelled without further planning action. The management objectives of the ACEC would be met through wilderness management. Briefly, these objectives are: (1) to protect and improve riparian vegetation, (2) to maintain and improve water quality, (3) to maintain and improve channel stability, (4) to maintain the recreation and cultural resources, and (5) to allow livestock grazing to the extent that it is compatible with the other objectives. (See Chapter III, Wildlife, for a detailed discussion of the ACEC management objectives and special management requirements.) Projects and procedures outlined in the special management requirements for the ACEC could require modification to bring them into conformance with the WMP.

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the wilderness values present in the area with long-term Congressional protection. The area would retain its natural appearance and be managed to provide outstanding opportunities for solitude. Outstanding opportunities for hiking, camping, picnicking, nature study, sightseeing, photography, bird hunting, bird watching, swimming, and float boating would also be maintained. The installation of the water gap across the river in the area south of Canador Peak would have a minimal impact on floating opportunities. The water gap would be less than 1 mile upstream of the Sunset Ditch Company's diversion dam in T. 19 S., R. 20 W., Section 21, W $\frac{1}{2}$ W $\frac{1}{2}$ , where portaging is already required. The special ecological, geological, cultural, and scenic features of the area would be maintained through wilderness management.

Management of wildlife and wildlife habitat under the HMP and transplanting desert bighorn sheep into the WSA would enhance the special wildlife features of the WSA.

The impacts to wilderness values could be significant under this alternative.

#### 2. Impacts to Water, Soils, Vegetation

In general, the restrictions of wilderness management on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation.



The water control structures recommended in the Gila Management Framework Plan (MFP) (BLM 1977) for watershed improvement could be authorized only if (1) they could be constructed in such a way that wilderness values would not be impaired and (2) if approved by the BLM Director. These projects would reduce flood and sediment damage in the individual watersheds where constructed and also downstream by reducing the volume and peak rate of surface runoff from small ephemeral tributaries of the Gila River. Although the impacts could be significant for the individual watersheds, the structures would be insignificant in reducing flood and sediment damage downstream on the Gila River. Vegetation loss and soil disturbances resulting from the initial construction of the structures would be outweighed in the long-term by an improvement in vegetation cover and soil stabilization. If the BLM Director does not approve the projects as required by the WMP, the benefits to the individual watersheds would not be realized under this alternative.

Although the ACEC designation would be cancelled under this alternative, the fencing of small plots to protect and improve the riparian vegetation could continue if approved by the State Director. The fencing would be acceptable under the WMP, which states that "Management will use the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily or permanently." The fencing and water gap proposed in the RIJP for the Caprock Mountain allotment (1078) (see Chapter III, Livestock Grazing) could also be approved if deemed necessary for rangeland protection. In addition, either of these fencing projects would improve the riparian vegetation in the long-term and, as a result, promote perpetuation of threatened or endangered wildlife species. Projects for this purpose are allowable under the WMP.

If the fenced plots or the fencing of the rims and the water gap are approved, the vegetation, soils, and water in the Gila Lower Box would be impacted as follows.

Fencing to exclude livestock would result in improved plant vigor, stand structure, and ground cover on the riparian vegetation within the excluded areas. Bottomland species could reestablish themselves. In the long-term, significant improvement in the condition of the riparian vegetation would occur. A good growth of riparian vegetation would help stabilize channel erosion, reduce flood velocities, and reduce sediment loads. Improved ground cover would stabilize soils and reduce surface runoff. In areas where surface runoff is reduced, surface water quality would improve slightly because of the lower amounts of suspended sediments and dissolved solids transported by runoff water. Improved riparian vegetation would provide overhanging cover along the river which would moderate water temperature. Improved riparian vegetation would also contribute to enhancement of the hydrologic functions of surface water storage and ground water recharge.

The dirt tank proposed in the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983) for the Donaldson allotment (1016) could be



constructed if it were determined through site-specific analysis to be necessary for the purpose of rangeland or wilderness protection. Road construction and motorized access to the dirt tank would not be authorized. Installation of the dirt tank would affect vegetation production and compact soils on an area of approximately 40 acres as a result of increased livestock use around the tank. Native vegetation probably would not reestablish itself in this area. However, the dirt tank would provide another source of water on the allotment which could result in more even distribution of existing animal grazing use. This would balance utilization of the vegetation resource on the Donaldson allotment by relieving grazing pressure around existing livestock waters.

The impacts to soils, water, and vegetation could be significant under this alternative.

### 3. Impacts to Wildlife

Under this alternative, the wildlife and wildlife habitat would be managed under a HMP (BLM Gila MFP 1977). The HMP would cover most of the riparian areas on Federal land in the Gila Lower Box area including many of the tributaries into the Gila River. The management objective of the HMP would emphasize the riparian vegetation and associated wildlife species. Many of these species are threatened or endangered (see Chapter III, Wildlife). Projects proposed in the HMP would not be significantly affected under wilderness management because the WMP allows habitat manipulations or wildlife projects for the benefit of threatened or endangered wildlife species as long as the resulting changes would be compatible with the preservation of wilderness character, consistent with wilderness management objectives for the area, and if the projects are the minimum necessary to accomplish the task. However, project approval from the State Director would be required on a case-by-case basis.

If the Gila River Lower Box Riparian ACEC projects involving fencing small plots to protect riparian vegetation is allowed to continue under approval of the State Director or if the fencing of the canyon rims and water gap as proposed for the Caprock Mountain allotment (1078) is authorized, significant improvements in the riparian wildlife habitat and aquatic habitat could occur. More than 300 terrestrial wildlife species and 12 fish species would benefit. Eight of the terrestrial species and two of the fish species are either on Federal or State-endangered lists.

Wilderness management restrictions on surface disturbing and mechanized activities would provide long-term protection for wildlife habitat. Restrictions on vehicular access would reduce the potential for harassment and poaching of wildlife and could reduce hunting pressure in the area.

The impacts on wildlife and wildlife habitat could be significant under this alternative.



#### 4. Impacts to Livestock Grazing

Generally, motorized access on the 1½ miles of existing vehicle trail within the WSA would not be allowed. However, a permit for vehicular access to maintain the existing 1 mile of boundary fence between the Caprock (1078) and Lazy B Cattle Company (5058) allotments that has existing access could be authorized if there were no practical alternatives.

The proposed dirt tank on the Donaldson allotment (1016) or the proposed fencing and water gap for the Caprock allotment (1078) could be constructed if it were determined through site-specific analysis that the projects are necessary for the purpose of rangeland or wilderness protection. Road construction and motorized access to the developments would not be authorized.

Impacts to livestock operators would consist primarily of minor inconveniences due to restricted vehicular access and would not be significant under this alternative.

#### B. Amended Boundary (Proposed Action)

Under the Amended Boundary Alternative, 5,835 acres of public land within the Gila Lower Box WSA would be recommended suitable for wilderness designation (see Map 29-1 for amended WSA boundary). The amended boundary would exclude 2,720 acres of public land on the southwest, south, and east boundaries of the WSA.

If the area within the amended boundary is designated wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (1981). Upon designation of the area within the amended boundary as wilderness, the 2,469-acre Gila Lower Box Riparian ACEC would be cancelled without further planning action. The management objectives of the ACEC would be met through wilderness management and would be affected as described under the All Wilderness Alternative.

#### 1. Impacts to Wilderness Values

The impacts to wilderness values under the Amended Boundary Alternative would be the same as those described under the All Wilderness Alternative with the following exceptions.

Approximately 2,720 acres in the southwest, south, and east portions of the WSA would not be protected by Congressional designation. The east boundary of the WSA would be adjusted to exclude the USGS gauging station. This would slightly enhance the naturalness of the area recommended suitable for wilderness. The boundary adjustments in the south and southwest exclude portions of the WSA with low quality opportunities for solitude (see Chapter IV, Solitude). Location of the southern boundary of the designated wilderness along section lines would simplify legal description and on-the-ground identification of the wilderness boundary (see Chapter IV, Manageability). At the present time, it appears that the area within the amended boundary could be managed as wilderness.



## 2. Impacts to Livestock Grazing

Under the Amended Boundary Alternative, the impacts to livestock grazing would be the same as those described under the All Wilderness Alternative.

## 3. Impacts to Other Resources and Uses

Under the Amended Boundary Alternative, the impacts to water, soils, vegetation, and wildlife would be the same as those described under the All Wilderness Alternative.

### C. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 8,555 acres of public land within the Gila Lower Box WSA would be recommended unsuitable for wilderness designation.

If the WSA is not designated wilderness, 2,469 acres of the Gila Lower Box WSA would be managed as the Gila River Lower Box Riparian ACEC (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983). (See Map 29-1 for general location of the ACEC.) The management objectives of the ACEC would be to protect and improve riparian vegetation, to maintain and improve water quality and channel stability, and to maintain existing recreation and cultural resources. Livestock grazing would be allowed to the extent that it is compatible with the other objectives.

The special management requirements would include fencing approximately 6 plots of approximately 5 acres each to protect riparian vegetation. Livestock use would be excluded on the fenced plots. However, if the fencing of the canyon rims and the water gap as proposed in the RIJP for the Caprock Mountain allotment (1078) is authorized, the fencing of small plots would no longer be necessary. (See Chapter III, Livestock Grazing.) No surface occupancy for energy minerals activities would be allowed and the area would be segregated from all forms of appropriation under the public land laws including the mining and mineral material sale laws. The boundary of the NSO and segregated area is drawn on legal subdivisions to simplify legal descriptions and totals 2,631 acres. The area would be closed to off-road vehicle use. Interpretive signs would be placed at main entrance points to the canyon to interpret the cultural resources of the area. Primitive recreation sites with trash cans and signs could be developed at either end of the canyon to provide for parking and serve as trailheads. The special management requirements for the ACEC also include a recommendation for acquisition of the following 320 acres of private land for inclusion in the ACEC:

T. 19 S., R. 19 W., Section 19: SW $\frac{1}{4}$ SW $\frac{1}{4}$   
 T. 19 S., R. 20 W., Section 21: SE $\frac{1}{4}$ SE $\frac{1}{4}$   
                                     Section 25: E $\frac{1}{2}$ E $\frac{1}{2}$   
                                     Section 28: W $\frac{1}{2}$ E $\frac{1}{2}$

Existing and potential uses on the remaining 6,086 acres within the Gila Lower Box WSA would be managed in accordance with the Gila MFP (BLM



1977) and the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983) (see Chapter III).

As noted in Chapter IV, Manageability, there are approximately 4,760 acres of powersite withdrawals along the river within the WSA boundary. Approximately 900 acres of the withdrawals are within the boundary of the ACEC. The powersite withdrawals represent valid existing rights. If these rights are exercised to use the area for powersites and related purposes, the management objectives of the ACEC would be subordinate to the valid existing rights. The powersite withdrawals are currently under review by the USGS, Water Resources Division. Predictions as to which of the withdrawals would be feasible for powersite locations are beyond the scope of this document, as are estimates of the impacts of powersite development.

#### 1. Impacts to Wilderness Values

Under the No Action/No Wilderness Alternative, the wilderness values of the Gila Lower Box would not be provided with long-term Congressional protection. Although management of all of the WSA acreage as specified in land use plans would be subject to administrative change in the long-term, the area would probably substantially retain its natural appearance, outstanding opportunities for solitude and primitive recreation, and special ecological, geological, cultural, and scenic features as long as part of the area is managed as an ACEC.

The management of wildlife under a HMP and the transplanting of desert bighorn sheep into the area would enhance the special wildlife features of the WSA. Approximately 2,469 acres of the WSA would be administratively protected as the Gila River Lower Box Riparian ACEC. Improvement in the riparian vegetation as a result of exclusion of livestock from the fenced plots or from the entire river canyon would enhance the natural values in the Lower Box portion of the WSA in the long-term. NSO stipulations on energy minerals leases and segregation from mineral entry would limit surface disturbance that could impact the area's naturalness.

Improved riparian vegetation would benefit birdwatching opportunities and improvement in watershed conditions and water quality would enhance water-based recreation opportunities such as swimming, kayaking, rafting, and canoeing. The installation of the water gap across the river in the area south of Canador Peak would have a minimal impact on floating opportunities. The water gap would be less than 1 mile upstream of the Sunset Ditch Company's diversion dam in T. 19 S., R. 20 W., Section 21, W $\frac{1}{2}$ W $\frac{1}{2}$ , where portaging is already required. Improvement in fisheries habitat could slightly improve fishing opportunities. Designation of the ACEC as limited to existing roads and trails for ORV use, the development of primitive recreation sites at either end of the Gila River Canyon, the installation of signs at major access points describing cultural resources, and the acquisition of adjacent private land would generally enhance existing primitive recreation opportunities within the ACEC. The portion of the WSA within the ACEC (approximately 29 percent of the WSA) could be expected to substantially retain its wild character as long as the area is administratively protected.



The construction of the water control structures proposed in the Gila MFP (BLM 1977) for watershed protection could degrade the quality of the apparent naturalness in the southern part of the WSA. The impacts on naturalness would vary according to the location, size, design, and number of structures constructed.

The impacts to wilderness values under this alternative could be significant.

## 2. Impacts to Water, Soils, Vegetation

Fencing selected plots within the ACEC or fencing the canyon rims and installing the water gap as proposed in the RIJP for the Caprock Mountain allotment (1078) would impact water, soils, and vegetation as described under the All Wilderness Alternative. The impacts could be more significant under this alternative because projects designed to improve the riparian vegetation would not be constrained by the WMP. This alternative would offer more flexibility in management of the riparian vegetation. State Director approval would not be required for proposed projects.

The construction of the water control structures proposed in the Gila MFP (BLM 1977) could reduce flood and sediment damage as described under the All Wilderness Alternative. However, the impacts could be more significant for the individual watersheds under this alternative since location of the structures would not be constrained by wilderness considerations. Vegetation loss and soil disturbances resulting from the initial construction of the structures would be outweighed in the long-term by an improvement in vegetation cover and soil stabilization. The structures would not significantly reduce flood and sediment damage downstream on the Gila River.

The impacts on water, soils, and vegetation in the Gila Lower Box could be significant under this alternative.

## 3. Impacts to Wildlife

Impacts to wildlife would be essentially the same as those described under the All Wilderness Alternative. Wildlife habitat would be managed under the provisions of the HMP and ACEC. This alternative would offer more flexibility in management and State Director approval would not be required for proposed projects.

The impacts on wildlife could be significant under this alternative.

## 4. Impacts to Livestock Grazing

The special management requirements for the ACEC would not significantly impact livestock grazing. The ACEC encompasses approximately 100 acres of the Donaldson allotment (1016) and 2,369 acres of the Caprock allotment (1078). There would be no loss of animal unit months on these allotments as a result of the exclusion of livestock grazing on the small



plots or as a result of the exclusion of livestock grazing from the entire canyon bottom by fencing the canyon rims. Vehicle use would be restricted to existing roads in the ACEC. There would be no restrictions on vehicle use in the remainder of the area.

The impacts to livestock grazing would not be significant under this alternative.



## APPENDIX 30

### LAS UVAS MOUNTAINS WSA (NM-030-065)

#### I. GENERAL DESCRIPTION

##### A. Location

The Las Uvas Mountains Wilderness Study Area (WSA) is located in northwestern Dona Ana County, approximately 30 miles northwest of Las Cruces, New Mexico, and 7 miles south of Hatch, New Mexico.

The Souse Springs, New Mexico, U.S. Geological Survey (USGS) topographic quadrangle covers the WSA. The map is at the 7½-minute scale.

##### B. Climate and Topography

The Las Uvas Mountains WSA is characterized by an arid, continental climate, with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly less than 9 inches, however, a wide variation in annual totals is characteristic of arid climates. More than half of the total annual precipitation occurs from July to September. Rainfall during these months usually is from convective thundershowers that are commonly brief and intense.

During the summer months, daytime temperatures quite often exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the middle 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

This WSA consists of the northwest part of the Sierra de Las Uvas. The Las Uvas Mountains are composed of tilted bedded volcanic rock with a gentle western slope and cliffs on the east side. The WSA is characterized by mesas, buttes, and canyons. Elevations within the WSA range from 4,600 feet in the northern part of the area to 6,198 feet near Little White Gap in the south.

##### C. Land Status

The WSA contains 11,067 acres of public land. There are 40 acres of private land within the WSA boundary. There are no State inholdings. (See Map 30-1 for land status within the WSA boundary.)



**LAS UVAS MTNS. WSA (NM-030-065)**  
 Proposed Action--No Action/No Wilderness Alternative

**MAP 30-1**  
**LAND STATUS**

— WSA Boundary

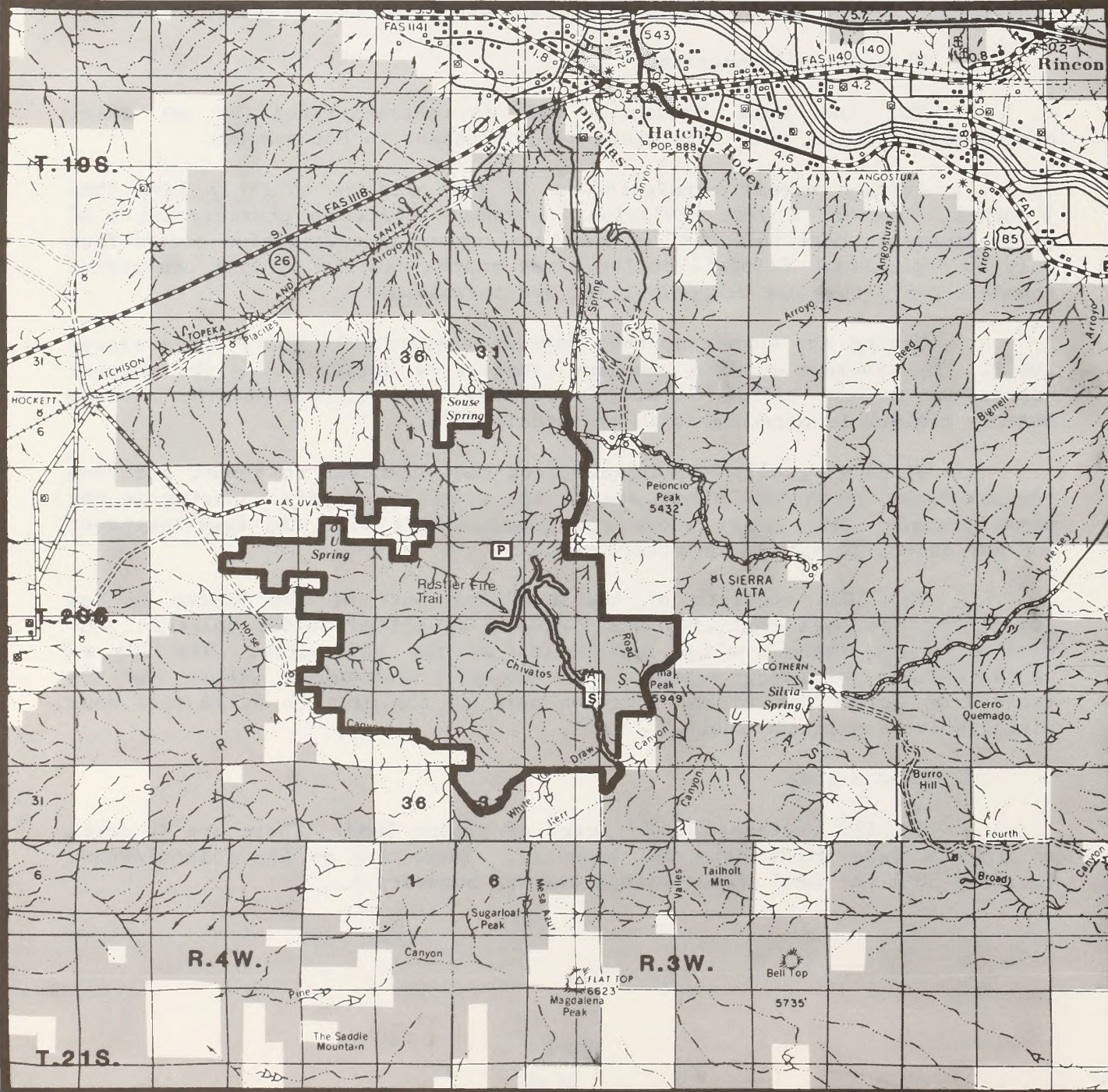
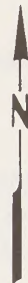
□ BLM

□ Private

□ State

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District,  
 January 1985





## D. Access

Legal access to the northeast boundary of the Las Uvas Mountains WSA is by way of County Road E05 which runs south off of State Highway 26, approximately  $\frac{1}{2}$  mile west of Hatch.

County Road E02, which runs southeast off of State Highway 26, approximately 7 miles southwest of Hatch, terminates on private land about  $\frac{1}{2}$  mile from the northwest part of the WSA. County Road E06 (Barksdale Road), which branches off of U.S. Highway 85 about 9 miles southeast of Hatch, also terminates on private land, in T. 20 S., R. 3 W., Section 28, about  $\frac{1}{2}$  mile from the southeast part of the WSA. The cherry-stemmed Rustler Fire Trail road provides physical access across this parcel of private land into the center of the WSA. The White Gap Pass Road connects the ends of these two county roads and provides physical access along the southern boundary of the WSA.

## E. Proposed Action, Alternatives, and Issues

## DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Action/No Wilderness (Proposed Action)
°Manage 11,067 acres as wilderness.	°Manage 11,067 acres without wilderness protection.
-Attempts would be made to acquire 840 acres of private and State lands within and adjacent to the WSA.	-No special attempts would be made to acquire State and private land.
-Close $4\frac{1}{2}$ miles of vehicle trails.	-Vehicle use would be allowed to continue.
-Require permits for vehicular access to maintain 6 dirt tanks and $\frac{1}{2}$ mile of allotment boundary fence.	
-11,067 acres would be closed to energy minerals leasing and mining claim location.	-11,067 acres would be open to energy minerals leasing (with no special protective stipulations) and mining claim location.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
-Vegetative collection and sales would not be allowed.	-5,120 acres could be opened for vegetative collection and sales of cacti, ocotillo, and yucca.



SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues
	Wilderness Values
All Wilderness (11,067 acres)	Wilderness protection would maintain the area's existing natural appearance, outstanding opportunities for solitude and dayhiking, and ecological special features.
No Action/No Wilderness (11,067 acres) (Proposed Action)	Wilderness values would not receive long-term Congressional protection. Although the area would probably retain its wilderness values in the short-term, management as specified in existing land-use plans would be subject to administrative change over the long-term. Future uses could be surface-disturbing and the resulting impacts to wilderness values could be significant.



Aerial view of the Las Uvas Mountains WSA.



## II. EXISTING RESOURCES

### A. Geology

The Sierra de Las Uvas is a faulted, domed uplift within a volcano-tectonic feature known as the Goodsight-Cedar Hills depression. The major stages of evolution have been late Cretaceous uplift, middle Tertiary volcanism and mountain building, and late Tertiary volcanism and rifting. Middle Tertiary volcanism produced several ashflow tuffs while late Tertiary volcanism produced eruptions of basaltic andesite.

The fault pattern within the WSA is complex. Most are high-angle normal faults trending northwest. Two major structures occur in the WSA: a northwest-trending graben near Big White Gap bordered on the southwest by the Big White Gap fault; and a north-trending graben northeast of Big White Gap bordered on the west by the Little White Gap fault and on the east by the Road Canyon fault.

### B. Water

The Las Uvas Mountains WSA forms part of a divide that separates the Mimbres Basin from the southern Palomas Basin. To the northeast, drainage is into the southern Jornada del Muerto. The Mimbres Basin is a noncontributing closed basin, while the Palomas Basin and southern Jornada del Muerto contribute to the larger Rio Grande Basin.

Surface water within the WSA drains into the river basins through an ephemeral stream system. Principal drainages include Horse Canyon and tributaries to Placitas Arroyo and Arroyo Angostura. Surface flow generally occurs as a result of summer thundershowers.

Ground water moves into the Rio Grande Valley from the uplands to the valley border and then moves down the valley. Ground water is available primarily in the alluvial fill down gradient from the WSA. Significant recharge to the ground water reservoir occurs in the major canyons and arroyos during flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

Two major soil types occur within the Las Uvas Mountains WSA. At higher elevations on mountain tops and steep sideslopes, soils are typically cobbly and shallow over basalt bedrock. The soils are interspersed between areas of rock outcroppings. Around the mountain footslopes in the northern part of the WSA, the soils are gravelly and typically have a cemented caliche layer within 30 inches of the surface.



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### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Las Uvas Mountains WSA consist of two major types:

<u>Vegetation Type</u>	<u>Range Site</u>	<u>Federal Acres</u>
Grass	Mountains	9,276
Creosote	Gravelly	1,791

The Las Uvas Mountains are predominantly covered with grass species consisting of black grama, fluffgrass, tobosa, and other gramas. Other associated species, occurring mainly in protected areas and on north facing slopes, are juniper, snakeweed, sotol, creosote, Mormon tea, and barrel cactus.

Creosote is the dominant vegetation on the gravelly slopes that surround the mountain area. Other associated shrub species are mariola, mesquite, and snakeweed. Grasses include black grama, bush muhly, fluffgrass, tobosa, and other gramas.

#### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by the New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

### E. Wildlife

The majority of the Las Uvas Mountains WSA is a grass mountain habitat site. On northern slopes and in canyons, there are junipers and shrubs such as oak and Apacheplume. This variation in the vegetation allows for more diversity in the wildlife community than would otherwise be expected.

An abundance of rimrock along the mesas in the area provides raptor nest sites and habitat for other rock-dwelling wildlife. Golden



eagles are common. Other common species dependent on this habitat are banded rock rattlesnakes and rock squirrels.

There are good populations of both scaled and Gambel's quail (BLM IHICS Data 1979). A resident mule deer herd is found in the Las Uvas Mountains, but the New Mexico Department of Game and Fish only estimates their numbers at one-half deer per section. The optimum numbers, according to the same estimate, would be three deer per section.

#### F. Visual

The Las Uvas Mountains have a Class B (moderate) scenic quality rating. The Las Uvas Mountains are characterized by mesas, buttes, and canyons. Landforms tilt to the north and colors are typically light and dark brown. Vegetation colors are light browns and dark greens. Canyon bottoms support an array of prickly pear, other cacti, creosote, grasses, mesquite, yucca, and sotol. At higher elevations, juniper trees dot the landscape and contrast with surrounding grasses.

Portions of the WSA are in three Visual Resource Management (VRM) Classes as follows: Class II--5,849 acres, Class III--609 acres, and Class IV--4,609 acres.

#### G. Cultural

There are no known historic or prehistoric sites in the Las Uvas Mountains WSA; however, there has been no survey. Based on topography and water sources rather than verifiable archaeological surveys, this WSA has a low cultural resources potential.

#### H. Air

Generally, the quality of air within the Las Uvas Mountains WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



## LAS UVAS MOUNTAINS

### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

##### 1. Energy Minerals (Geothermal)

As of December 1, 1984, there were no mineral leases in the WSA.

There are no known geothermal occurrences in the WSA. The only favorable geologic indicators are the Tertiary igneous history of the Sierra de las Uvas, the location of the WSA within the Rio Grande rift, and the presence of several fault zones. Without direct geothermal evidence or other favorable geothermal indicators, the WSA is classified as having low potential for geothermal resources.

##### 2. Nonenergy Minerals (Zeolites)

As of September 17, 1984, there were no mining claims recorded with BLM in the WSA.

Zeolite minerals occur in tuffs of the Bell Top formation in the Cedar Hills, about 10 miles southeast of the WSA. The tuffs of the Bell Top formation in the Cedar Hills and the Sierra de Las Uvas have a similar geologic history, so the occurrence of zeolites in the WSA is at least a possibility. For this reason, the WSA is classified as having low potential for zeolite resources.

#### MINERAL RESOURCES POTENTIAL OF THE LAS UVAS MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Geothermal	Tertiary volcanics; Rio Grande rift; fault zones	Low	--
Nonenergy Minerals			
Zeolites	Tuffs of the Bell Top formation; zeolite occurrences in the Cedar Hills	Low	--

Note: \*Acreage was not calculated for areas with low potential.

#### B. Watershed

Water use within the Las Uvas Mountains WSA is primarily by livestock and wildlife. There are six dirt tanks inside the WSA that



utilize surface runoff (see Chapter III, Livestock Grazing). Additionally, there is a water spreading system comprised of a series of small rock dikes within the northern part of the WSA.

### C. Livestock Grazing

#### 1. Allotments

Parts of four grazing allotments are within the Las Uvas Mountains WSA. Steep slopes on the east side make part of this WSA inaccessible to livestock grazing. Licensed grazing use on public land includes cattle and a few horses. The W. Cothorn allotment (3015) is under an implemented Allotment Management Plan (AMP).

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
J. Bustamante 3010	3,465	252	1,408	41%
Sierra Alta Ranch 3012	6,695	1,380	567	8%
W. Cothorn 3015	14,654	3,252	2,671	18%
Las Uvas Ranch 3031	17,289	3,089	6,421	37%
TOTAL			11,067	

#### 2. Ranch Management

#### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
Sierra Alta Ranch 3012	2 dirt tanks interior fence	T. 20 S., R. 3 W., Sec. 5 ½ mile
W. Cothorn 3015	interior fence	¾ mile
Las Uvas Ranch 3031	dirt tank dirt tank 2 dirt tanks interior fence	T. 20 S., R. 4 W., Sec. 23 T. 20 S., R. 4 W., Sec. 30 T. 20 S., R. 3 W., Sec. 8 ½ mile

#### Boundary Fences:

Cothorn 3015 and Las Uvas Ranch 3031	2 miles
Cothorn 3015 and Sierra Alta Ranch 3012	1½ miles
Las Uvas Ranch 3031 and Bustamante 3010	3 miles
Bustamante 3010 and Sierra Alta Ranch 3012	2½ miles

Note: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.



## LAS UVAS MOUNTAINS

### D. Recreation

Recreation activities in and around the Las Uvas Mountains WSA generally require motorized use. They are primarily rockhounding, sightseeing, hunting, and off-road vehicle (ORV) use. Rockhounding for agate nodules occurs throughout the Las Uvas Mountains. Sightseeing is usually associated with ORV use. The White Gap Pass Road, which forms the southern boundary of the WSA, provides a particularly scenic and challenging route through the mountains. The Rustler Fire Trail road, cherry-stemmed into the eastern part of the WSA, provides a challenge for the ORV enthusiast and access for hunters.

The Las Uvas Management Framework Plan (MFP) (BLM 1976) provides general guidance for the management of the Las Uvas Mountain range in regards to recreation. The MFP states that the Las Uvas Mountains will be managed "in a manner which will perpetuate their relatively unintruded, remote, and scenic characteristics." All future developments are to be designed and constructed to avoid impairment of scenic and recreation values.

Primitive recreation opportunities are described in Chapter IV, Primitive and Unconfined Recreation.

### E. Realty Actions

A temporary State Aid Withdrawal was located within the Las Uvas Mountains WSA. The State of New Mexico completed their land selection and the withdrawal was reviewed by the BLM. The withdrawal was revoked effective October 7, 1983.

The Village of Hatch's right-of-way (ROW) for water facilities within the WSA was relinquished and the ROW cancelled October 12, 1984.

### F. Wildlife

There are no existing wildlife developments in the Las Uvas Mountains WSA, but a deer Habitat Management Plan is proposed for the entire mountain range in the Southern Rio Grande MFP (BLM 1981). New waters and vegetation treatments could be proposed in this plan.

### G. Vegetative Products

An area of approximately 5,120 acres in the southeast part of the Las Uvas Mountains WSA, around Chivato Canyon, was identified in the Southern Rio Grande MFP (BLM 1981) as a potential vegetative collection and sale area for cacti, ocotillo, and yucca.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

The Las Uvas Mountains WSA generally appears natural. Human imprints affecting the naturalness of the WSA include dirt tanks, vehicle trails, and the cherry-stemmed Rustler Fire Trail road.

Six dirt tanks are within the WSA. The tanks are located on the southwest, south, east, and northeast edges of the WSA less than  $\frac{1}{2}$  mile from the boundary. All are accessible by vehicle trails.

The naturalness in the northeast and east parts of the WSA is moderately impacted where most of the dirt tanks are located. However, due to their locations on the edges of the WSA and topographic screening, the dirt tanks are substantially unnoticeable when considering the overall naturalness of the WSA. The fences also have an insignificant effect on naturalness because they are constructed of materials that generally blend in with the landscape.

The access road to Chivato Tank in T. 20 S., R. 3 W., Section 20, SE $\frac{1}{4}$ , and the tank itself are within the cherry-stem that includes the Rustler Fire Trail. This part of the road and the Tank are located in the bottom of a canyon and do not greatly impact naturalness. The Rustler Fire Trail has a somewhat more significant impact on naturalness. The Trail was constructed by the BLM in 1968 and maintained by the BLM in 1972-1974, using heavy machinery. The rancher subsequently assumed maintenance. The Trail runs north up Chivato Canyon from Chivato Tank, climbing the steep face of a bluff. It fans out into three separate dead-end trails on top. There are approximately 4 miles of the trail cherry-stemmed in the WSA. The Trail is visually noticeable on top of the bluff and when looking north up Chivato Canyon from Chivato Tank. The Trail locally impacts naturalness but does not degrade the overall naturalness of the Las Uvas Mountains WSA.

##### b. Solitude

The Las Uvas Mountains WSA provides outstanding opportunities for solitude. The entire WSA contains rugged canyon and mesa type topography which provides plenty of opportunities to escape the sights and sounds of other visitors. The size and shape of the WSA and moderate vegetative screening provided by scattered juniper enhance these opportunities.

##### c. Primitive and Unconfined Recreation

The Las Uvas Mountains WSA provides opportunities for hiking, backpacking, horseback riding, and hunting. The area provides



## LAS UVAS MOUNTAINS

outstanding opportunities for day hiking. The area is not large enough for an extended backpacking trip. Horseback riding is somewhat limited due to approximately 10 miles of grazing allotment boundary and interior pasture fences within the WSA.

Although some outstanding opportunities are available, the WSA does not offer a wide diversity of high quality primitive recreation opportunities.

### 2. Special Features

The Las Uvas Mountains WSA provides habitat for the night blooming cereus, a Bureau sensitive plant species proposed for Federal listing, and the southwestern barrel cactus, a plant species selected by the New Mexico State Heritage Program as a special concern element (see Chapter II, Vegetation). These are ecological features of scientific value.

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Las Uvas Mountains WSA as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the specific vegetation types in the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	9,276
creosote	1,791

#### b. Distance From Population Centers

The Las Uvas Mountains WSA is approximately 2 hours driving time from El Paso, Texas; 1 hour from Las Cruces, New Mexico; 3 hours from Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.



B. Manageability

Two factors affect the capability of the Las Uvas Mountains WSA to be managed as wilderness: land status patterns and the cherry-stemmed Rustler Fire Trail.

The WSA is almost totally surrounded by State and private lands. There is a 40-acre private inholding in the north-central part of the WSA. In the northwest part of the WSA, the boundary is convoluted because of the land status patterns. As a result, the State land in T. 20 S., R. 4 W., Sections 12 and 13, is surrounded on three sides by the WSA and is near the center of the area. Nonwilderness or nonconforming uses on these surrounding nonpublic lands, especially in Sections 12 and 13, or on the private inholding, could negatively impact wilderness values within the WSA. Should the Las Uvas Mountains WSA be designated wilderness, acquisition of the State and private lands legally described below would enhance BLM's ability to manage the area.

<u>Legal Description</u>	<u>Acres</u>
State Land	
T. 20 S., R. 3 W., Section 30: SW $\frac{1}{4}$ SW $\frac{1}{4}$	40
T. 20 S., R. 4 W., Section 1: E $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$	120
Section 12: SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$	200
Section 13: NE $\frac{1}{4}$ NW $\frac{1}{4}$	40
Section 23: NW $\frac{1}{4}$	<u>160</u>
TOTAL	560
Private Land	
T. 20 S., R. 3 W., Section 6: NW $\frac{1}{4}$	160
Section 17: N $\frac{1}{4}$ NE $\frac{1}{4}$	80
Section 18: NW $\frac{1}{4}$ NE $\frac{1}{4}$	<u>40</u>
TOTAL	280
GRAND TOTAL	840

Continued vehicle use on the cherry-stemmed Rustler Fire Trail would create impacts on the naturalness and solitude in the southeast and east-central parts of the WSA. If the area is designated wilderness, signs and possibly barriers would have to be installed to prevent hunters and recreationists from driving off of the Trail.

Since these are not major manageability conflicts, the Las Uvas Mountains WSA could be managed to preserve its existing wilderness character.



## LAS UVAS MOUNTAINS

### V. CONSULTATION AND COORDINATION

#### A. Public Involvement Overview

Personal letters, form letters, and petitions were received on the Las Uvas Mountains unit during both the public comment periods on the New Mexico Wilderness Review Initial Inventory Decision (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980).

In the March 1980 WSA Proposals, the BLM proposed to drop this area. This recommendation was based on the number and location of imprints, vehicle trails and roads, and the convoluted configuration of the intensive inventory unit.

Numerous personal contacts made during the public review period and the analysis of public comments revealed controversy over the BLM's recommendation to drop the entire unit. The application of the road definition to the Rustler Fire Trail and the BLM's evaluation of wilderness characteristics in the west half of the unit were questioned. Comments indicated that an area of approximately 10,000 acres surrounding the Fire Trail should be a WSA.

The final WSA decision rested largely with the application of the road definition to the Rustler Fire Trail and a reevaluation of the Trail's effects on apparent naturalness and outstanding opportunities. Based on public comments and additional field checks, the BLM determined that the Rustler Fire Trail did not meet the road definition and that an area of 11,067 acres in the western part of the intensive inventory unit met the basic wilderness criteria. This area was designated the Las Uvas Mountains WSA in the November 1980 New Mexico Wilderness Study Area Decisions. The decision that the Rustler Fire Trail did not meet the road definition was subsequently appealed to the Interior Board of Land Appeals (IBLA) by Wilford Cothorn, the grazing permittee in the affected portion of the Las Uvas Mountains WSA.

The IBLA ruled on the appeal of the Rustler Fire Trail decision on September 8, 1983. The IBLA ruling indicated that based on the present state of the record, it was not possible to determine whether the Rustler Fire Trail was correctly found to be a vehicle trail rather than a road. The case was remanded to BLM for reconsideration and preparation of a new decision more responsive to the appellant's allegations. After reevaluation of information provided by the appellant, BLM employees, and BLM records, it was determined that the Rustler Fire Trail is a road as defined in the Wilderness Inventory Handbook (BLM 1978) and Organic Act Directive 78-61, Change 2. The Rustler Fire Trail was, therefore, cherry-stemmed out of the designated Las Uvas Mountains WSA.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983), 17 personal letters were received on the Las Uvas Mountains WSA. Comments in the ten letters favoring wilderness designation generally related to wilderness values, supplemental values, size, manageability, and resource conflicts.



Many of the inputs listed basic wilderness values and supplemental values, such as diverse communities of plants and animals, as reasons for supporting wilderness designation of the WSA. Two comments favored designation of the entire area (11,067 acres) while another comment indicated support for designation of an area of 15,000 acres.

Manageability comments included expressions of disagreement with the use of manageability conflicts to support a nonwilderness recommendation and the general statement that the area is manageable. Comments also suggested that land exchanges with the State and elimination of off-road vehicle (ORV) access would enhance manageability.

Other comments stated that resource conflicts are not significant, wilderness is not something to be designated when there are no other potential uses, and the area should be wilderness regardless of pressure from ORV users. Additional comments supporting wilderness designation noted that the Las Uvas Mountains WSA is close to urban population centers and offers easy access.

Seven personal letters were received that indicated opposition to wilderness designation for the Las Uvas Mountains WSA. Two of the letters gave no reasons and one specifically agreed with the Draft Environmental Assessment's Recommended Action of No Action/No Wilderness. Comments submitted by the minerals industry opposed wilderness designation because the area has potential for zeolites and because "oil, gas, and geothermal occurrences within the WSA are probable due to the existence of these types of exploration wells located northeast and southeast of the WSA."

#### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to minerals, water, soils, vegetation, wildlife, visual, cultural, air, recreation, realty actions, and vegetative products are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



SUMMARY OF SCOPING

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Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Amended Boundary	An Amended Boundary Alternative was not analyzed because resource conflicts are not significant and potential boundary adjustments that might better resolve manageability conflicts were not identified.

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Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Livestock Grazing	No significant impacts were identified for livestock grazing; however, this issue will be discussed because of Statewide interest.

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Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Action/ No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

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Issues Selected for Detailed Analysis

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The primary issue for this WSA is the quality of the area's wilderness values. The impacts of the cherry-stemmed Rustler Fire Trail and the land status patterns surrounding the WSA are identified as factors affecting the lesser issue of the area's manageability.

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## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 11,067 acres of public land within the Las Uvas Mountains WSA would be recommended suitable for wilderness designation. (See Map 30-1 for location of the WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the existing wilderness values in the area with significant long-term Congressional protection. The area would be specifically managed to maintain the existing natural appearance and outstanding opportunities for solitude and dayhiking. The area's special features, habitat for the night-blooming cereus and Southwestern barrel cactus, would also be maintained.

Two factors could slightly impact the capability of the Las Uvas Mountains WSA to be managed as wilderness. The sights and sounds of nonwilderness uses on the non-Federal lands that almost totally surround the Las Uvas Mountains WSA could degrade natural values and opportunities for solitude. The impacts could be minimal to major depending on the type and extent of activity occurring and the location and type of access. However, under the All Wilderness Alternative, attempts would be made to acquire approximately 840 acres of State and private lands within and adjacent to the area to enhance manageability. Continued vehicle use on the Rustler Fire Trail would impact the naturalness and opportunities for solitude in the vicinity of the Trail.

#### 2. Impacts to Livestock Grazing

Generally, motorized access on vehicle trails within the designated wilderness would not be authorized. However, if there were no practical alternatives, permits for vehicular access along 3 miles of existing trail could be authorized for maintenance of the following rangeland developments: 2 dirt tanks on Sierra Alta (3012), 4 dirt tanks on Las Uvas (3031), and  $\frac{1}{4}$  mile of boundary fence between Bustamante (3010) and Sierra Alta (3012). Permittees on the Las Uvas (3031) and Bustamante (3010) allotments would not be allowed to use motor vehicles to check cattle on approximately  $1\frac{1}{2}$  miles of existing vehicle trails. Checking livestock on foot or horseback could result in less effective livestock management due to the inconvenience and time requirements and could impact operating costs depending on the use normally made of vehicle trails. Overall, there would not be significant impacts to any one livestock operator.



B. No Action/No Wilderness (Proposed Action)

Under the No Action/No Wilderness Alternative, the entire 11,067 acres of public land in the Las Uvas Mountains WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses as described in Chapter III could be implemented.

1. Impacts to Wilderness Values

Under the No Action/No Wilderness Alternative, the natural values, outstanding opportunities for solitude and dayhiking, and special ecological features of the Las Uvas Mountains WSA would not be provided with long-term Congressional protection. Since existing and proposed BLM plans do not identify any activities which would impair wilderness values, the entire area would probably retain its natural character in the short-term. However, management of the area as specified in land use plans would be subject to administrative change in the long-term. Future uses could be surface-disturbing and the resulting impacts to wilderness values could be significant.

2. Impacts to Livestock Grazing

Motorized access on existing vehicle trails could continue. All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. There would be no impacts to livestock grazing.



## APPENDIX 31

### ORGAN MOUNTAINS WSA (NM-030-074)

#### I. GENERAL DESCRIPTION

##### A. Location

The Organ Mountains Wilderness Study Area (WSA) lies in eastern Dona Ana County, approximately 15 miles east-northeast of Las Cruces, New Mexico.

The U.S. Geological Survey (USGS) topographic maps covering the WSA are the Organ and Organ Peak, New Mexico quadrangles. Both of these maps are at the 7½-minute scale.

##### B. Climate and Topography

The Organ Mountain WSA is characterized by a semiarid, continental climate. Significant differences in climatic conditions are associated with changes in elevation and exposure.

Average annual precipitation in the area, above 6,000 feet, is close to 16 inches, nearly double the total in the valley. Maximum precipitation occurs in the summer in both the mountains and the valley, primarily from convective thundershowers. A slight secondary maximum occurs in the winter with some light snowfall common at higher elevations.

During the summer months, daytime temperatures quite often exceed 100°F at elevations below 5,000 feet. Average monthly maximum temperature during July at higher elevations is in the mid 80's. In January, the coldest month, average monthly minimum temperature is in the low 20's. Temperatures vary markedly depending on exposure, with the northeast aspect being considerably cooler.

Wind speeds are usually moderate, although relatively strong winds often accompany frontal activities and thundershowers. Spring is the windy season and gusty winds may exceed 30 mph in the afternoons. Winds generally predominate from the southeast in summer and from the northwest in winter, but local surface wind directions will vary greatly because of local topography.

The Organ Mountains are a north-south trending fault block mountain range characterized by extremely rugged terrain with a multitude of steep-sided crevices, canyons, and spires. The spires are the most striking features of the Organ Mountains. At a distance, they resemble the giant pipes of a stupendous organ. Elevations within the WSA range from about 5,000 feet along the pediments up to 8,010 feet. The towering and precipitous mountain mass of the Organ Mountains is bound by pediments that are covered with extensive block and boulder laden alluvial cone-fans. These pediments and fans are variably incised by water courses headcutting into the mountains.



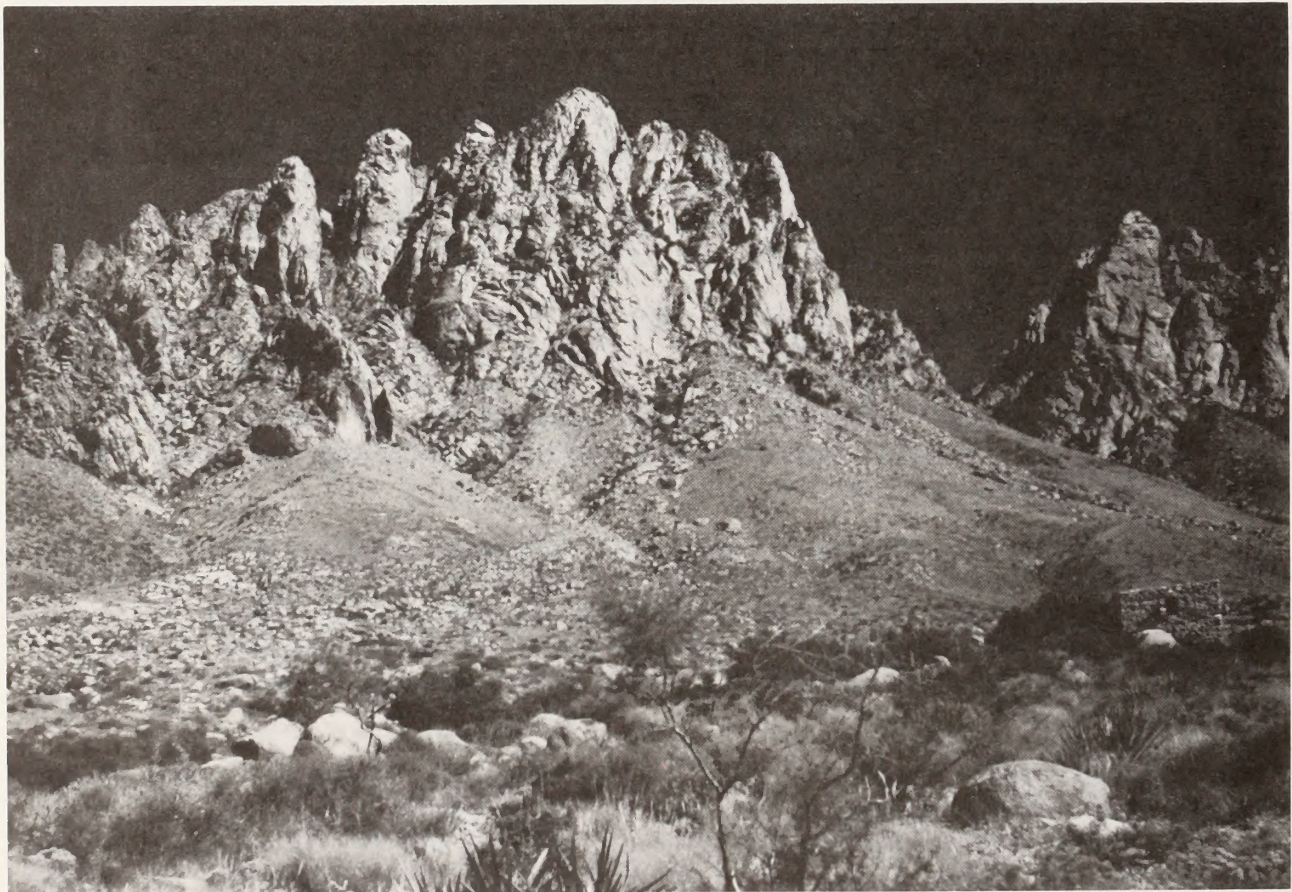
## ORGAN MOUNTAINS

### C. Land Status

The Organ Mountains WSA contains 7,144 acres of public land. There are 40 acres of private land (a patented mining claim) within the boundary of the WSA. (See Map 31-1 for land status.)

### D. Access

Legal access to the Organ Mountains WSA is available along the east and west boundaries. The Aguirre Spring Campground access road, which forms most of the eastern boundary of the WSA, is a paved BLM road running south off of U.S. Highway 70, about 3½ miles east of Organ. On the west side of the WSA, the BLM's West Side access road runs south from U.S. Highway 70, about 1 mile west of Organ and forms part of the WSA's western boundary.



The Rabbit Ears near Mine House Spring.



# ORGAN MTNS WSA (NM-030-074)

Proposed Action--All Wilderness Alternative

— WSA Boundary

■ BLM

□ Private

■ State

MAP 31-1

LAND STATUS

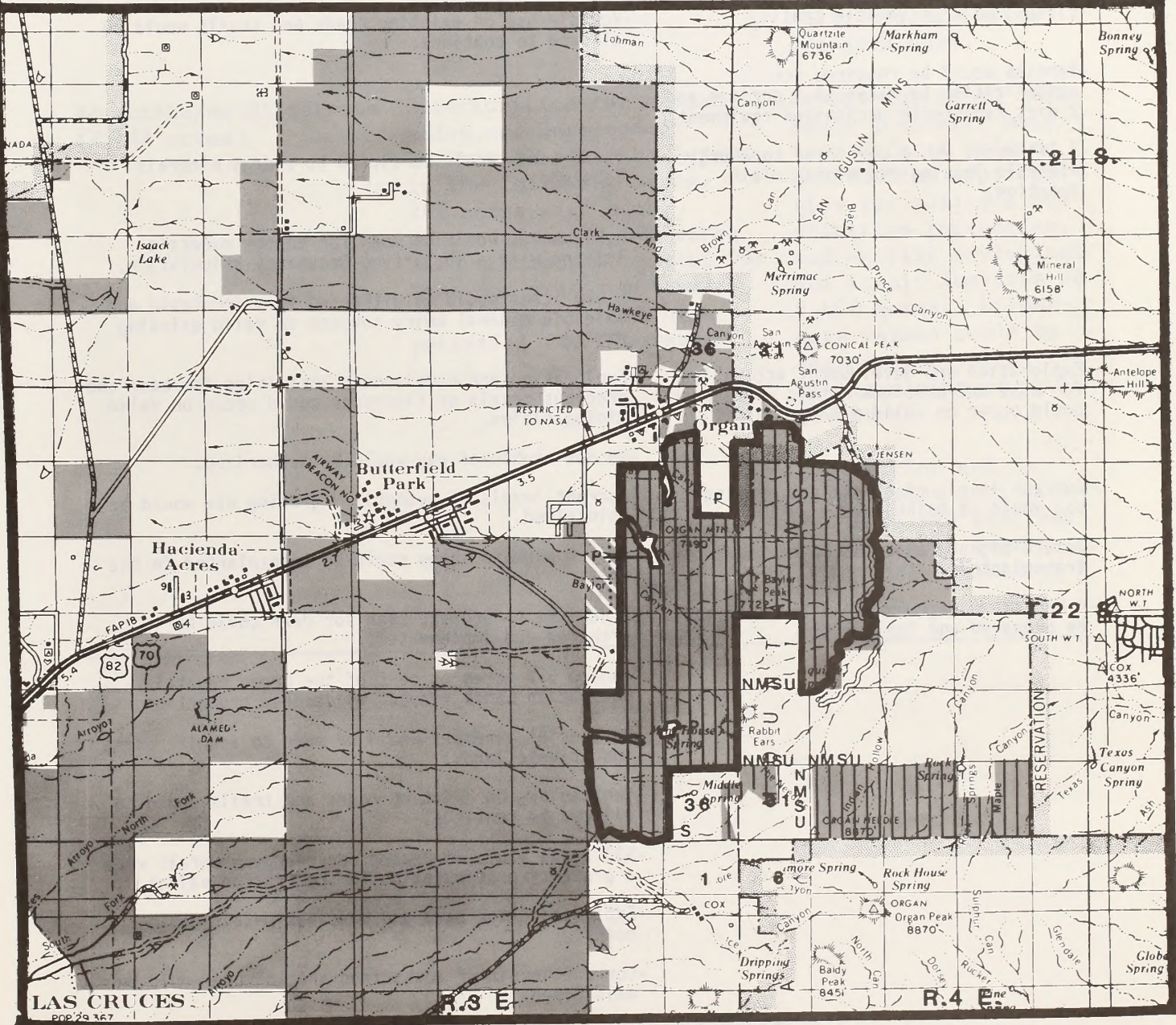
■ Organ Mtns. Scenic ACEC

■ BLM Surface/Non BLM Subsurface

■ Lands Removed from WSA Status after Reinventory

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District,  
January 1985





## ORGAN MOUNTAINS

### E. Proposed Action, Alternatives, and Issues

#### DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness (Proposed Action)	No Action/No Wilderness
°Manage 7,144 acres as wilderness.	°Manage 6,690 acres without wilderness protection as an Area of Critical Environmental Concern for visual resources within the Organ Mountain Recreation Lands.
-Attempts would be made to acquire 605 acres of private land and 520 acres of State land.	-No special attempts would be made to acquire State and private lands.
	-Cooperative agreements would be sought to manage adjacent New Mexico State University land and State land as Visual Resource Management Class I.
-Close 1 mile of vehicle trails.	-Vehicle use on existing roads and trails would be allowed to continue.
-Permits would be required for authorization to maintain 4 springs and 2 dirt tanks with mechanized equipment.	
-7,144 acres would be closed to energy minerals leasing and mining claim location.	-1,479 acres would be closed to energy minerals leasing.
	-5,211 acres would be open for energy minerals leasing with a No Surface Occupancy stipulation.
	-6,690 acres would be withdrawn from locatable and saleable mineral entry subject to valid existing rights.
-Exploration and development activities for base and precious metals or fluorspar could occur on valid mining claims.	-Exploration and development activities for base and precious metals or fluorspar could occur on valid mining claims.
	-No new rights-of-way would be authorized.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
-Desert bighorn sheep could be transplanted in the area.	-Desert bighorn sheep could be transplanted in the area.
-A Habitat Management Plan for deer could be prepared and implemented.	-A Habitat Management Plan for deer could be prepared and implemented.
	°Manage 593 acres as part of the Organ Mountain Recreation Lands without wilderness protection.
	-No special attempts would be made to acquire State and private lands.
	-Vehicle use on existing roads and trails would be allowed to continue.
	-593 acres would be leased for energy minerals with a protective stipulation for recreation values.
	-Exploration for base and precious metals could occur.
	-Current levels of authorized grazing use would be maintained.



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues	
	Nonenergy Mineral Exploration and Development	Wilderness Values
All Wilderness (7,144 acres) (Proposed Action)	Opportunities for exploration and development activities would be forgone in the following areas: 200 acres with high potential and 3,600 acres with moderate potential for base and precious metals, and 100 acres with high potential for fluorspar.	Wilderness protection would maintain the area's existing high quality natural values, outstanding opportunities for solitude and primitive recreation, and special ecological and scenic features could be degraded if valid mining claims are developed.
No Action/No Wilderness (7,144 acres)	Opportunities for exploration and development activities would be forgone in the following areas: 200 acres with high potential and 3,007 acres with moderate potential for base and precious metals, and 100 acres with high potential for fluorspar.	<p>Management as an ACEC would generally maintain natural values, outstanding opportunities for solitude and primitive recreation, and special ecological and scenic features on 6,690 acres. Wilderness values could be degraded if valid mining claims are developed.</p> <p>Exploration and development activities for base and precious metals could degrade wilderness values on 593 acres.</p>



## ORGAN MOUNTAINS

### II. EXISTING RESOURCES

#### A. Geology

The Organ batholith, emplaced during the Tertiary period, is the dominant feature in the Organ Mountains, both geologically and visually. The batholith consists mainly of quartz monzonite. Precambrian granite is exposed in the northwestern portion of the WSA. Other intrusive rocks in the WSA include rhyolite porphyry, diorite porphyry, andesite porphyry, and latite porphyry. The Tertiary Orejon andesite, extruded during a period of volcanism predating the batholith, is exposed in several areas in the western portion of the WSA. Paleozoic marine sedimentary rocks crop out along the western flank of the Organ Mountains in a narrow, north-trending zone. Major formations include the Permian Hueco formation, the Pennsylvanian Panther Seep formation and Lead Camp limestone, and the Silurian Fusselman Dolomite.

High angle normal faults and small thrust faults which predate the emplacement of the batholith, are present along the western flank of the Organ Mountains. The Torpedo-Bennett fault zone in the northwestern portion of the WSA is an area of known mineral deposits.

#### B. Water

The Organ Mountains WSA forms part of a divide between the southern Tularosa Basin and the Mesilla Basin. The Tularosa drainage is one of several closed basins within central New Mexico. The Mesilla Basin contributes to the larger Rio Grande Basin.

Surface water within the WSA drains into both basins through an ephemeral stream system. Principal drainages into the Mesilla Basin include Blair and Baylor Canyons. Tributaries to Anvil Creek on the east side contribute to the Tularosa Basin. Surface flow generally occurs as a result of summer thundershowers.

Ground water movement on the west side of the Organ Mountains is towards the Rio Grande Valley. In the Tularosa Basin, movement is generally eastward. Ground water is available on the alluvial fans in both basins, but the material thins to a shallow bedrock adjacent to the mountain front. Recharge to the ground water reservoir occurs mainly in the canyons and arroyos from infiltration of flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

#### C. Soils

Three major soil types occur within the Organ Mountains WSA. Soils on steep slopes at higher elevations typically are very cobbly and stony and range from shallow to moderately deep. These soils are interspersed between areas of rock outcropping on ridges, ledges, and cliffs. The east footslopes of the Organ Mountains are characterized by low ridges and broad alluvial fans. The soils, formed from granitic bedrock



types, are very gravelly to cobbly and typically are shallow on ridgetops and deeper on the less sloping stable areas. On the western footslopes of the mountains, the soils are formed from mixed igneous parent materials and typically have a gravelly surface and cobbly subsurface layer.

#### D. Vegetation

##### 1. General

Three life zones occur in the Organ Mountains. They consist of the Transition Zone from 7,000 feet to the peaks, the Upper Sonoran from 4,500 feet to 8,000 feet, and the Lower Sonoran below 5,000 feet. The vegetation and associated range sites within the Organ Mountains WSA consist of four major types:

Vegetation Type	Range Site	Federal Acres
Ponderosa pine	Mountain tops	163
Pinyon-juniper-mixed mountain shrub	Mountains	3,362
Mixed desert shrub	Gravelly loam	3,501
Mixed desert shrub	Sandy	118

Ponderosa pine is the dominant vegetation on the mountain tops in the Transition Zone. Pinyon-juniper trees occur at slightly lower elevations and in protected canyons in the Upper Sonoran Zone. Associated shrub species are diverse and varied. Shrubs on these mountain slopes include mountain mahogany, snakeweed, Mormon tea, oak, sotol, Apacheplume, sumac, tarbush, spicebush, creosote, mesquite, mariola, mimosa, and acacia. Many grass species are present in small quantities. Grama grasses are the most prevalent.

In the Lower Sonoran Life Zone, mixed desert shrub species are the dominant vegetation on the gravelly loam areas on slopes around the base of the mountains. These species include snakeweed, mimosa, mesquite, creosote, cacti, Mormon tea, and sotol. Many other shrub species occur in small quantities. Major grass species present are black grama, silver bluestem, tobosa, and other gramas.

Mixed desert shrub sandy areas spread out into the flats on both sides of the mountain range. Major shrub species include snakeweed, Mormon tea, yucca, mesquite, creosote, and Apacheplume. Grass species include bush muhly, tobosa, threeawns, and gramas in small quantities.

##### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).



## ORGAN MOUNTAINS

Species: Aletes filifolius

Status: Selected by the New Mexico State Heritage Program as a State sensitive species.

Habitat: Occurs on rocky canyon slopes, 6,200-7,300 feet.

Species: Cereus greggii - night blooming cereus

Status: Selected as a Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Coryphantha organensis - Organ Mountain coryphantha

Status: Selected by the New Mexico State Heritage Program as a special concern element.

Habitat: Canyons and west facing slopes in the Organ Mountains.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

Species: Oenothera organensis - Organ Mountain primrose

Status: Selected as a Bureau sensitive species proposed for Federal listing.

Habitat: Grows around spring areas; restricted to the Organ Mountains.

Species: Perityle cerna - rock daisy

Status: Selected as a Bureau sensitive species proposed for Federal listing.

Habitat: Grows on vertical cliffs with little or no direct sunlight.

Species: Scrophularia laevis - smooth figwort

Status: Selected by the New Mexico State Heritage Program as a special concern element.

Habitat: Occurs on the highest peaks.

Species: Sicyos glaber

Status: Selected by the New Mexico State Heritage Program as a special concern element.

Habitat: Occurs in rocky soils on west facing slopes at approximately 6,000 feet.

### E. Wildlife

#### 1. General

Within the Organ Mountains WSA, there are great elevational differences (5,000 feet to 8,010 feet). Because of this, there is quite a variation in vegetation. Three life zones are found in the WSA.



About half of the WSA has been mapped as mixed shrub desert (41 percent) and creosote (9 percent). These habitat sites are within the Lower Sonoran Life Zone. The Upper Sonoran Zone is the mixed shrub mountain habitat site between 4,500 feet and 8,000 feet. Small pockets of ponderosa pine, representative of the Transition Zone, are found at the highest elevations.

The Organ Mountains have a varied wildlife community attributable largely to the elevation and vegetation differences. Several other factors also contribute.

Springs and seeps are well-distributed in the WSA. Some are seasonal, some yearlong. There is enough water for wildlife needs.

Much of the range is unvegetated cliffs which have a particular wildlife community associated with them. Golden eagles, prairie falcons, red-tailed hawks, and great horned owls nest in the cliffs, as do smaller birds such as canyon wrens and white-throated swifts, which are abundant in the WSA.

Certain mammals and reptiles are also associated with the rocky areas. Ringtails and rock rattlesnakes are typical rock-dwellers.

In the mixed shrub types, mule deer are common. The New Mexico Department of Game and Fish (NMDGF) (1980) estimates that there are 13 deer per section and the optimum number is 36 deer per section.

Mountain lions are fairly common in the San Andres Mountains, just north of the WSA. It is likely that they are also found in the WSA.

## 2. Threatened or Endangered Fauna Species

A State-listed endangered species, the Trans-Pecos rat snake has been collected in the Organ Mountains. It is often found in rocky, shrub-covered areas. It is threatened because of over-collecting.

Desert bighorn sheep, another State-listed endangered species, may be in the Organ Mountains. There are many reports from the military land south of the WSA, although none have been confirmed by NMDGF. When the San Andres herd was larger (pre-scabies outbreak), rams sometimes wandered south at least to San Augustin Peak and probably past Highway 70 into the WSA (Sandoval 1982).

Four molluscs, three species of Ashmunella and one of Sonorella, are endemic to the Organ Mountains. These molluscs are usually found in leaf litter and beneath rock talus under cliffs. Although at present there are no known threats to these snails and there have been no documented population declines, they are very restricted in distribution and little is known of them. The New Mexico Heritage Program lists these animals as elements of concern.

The U.S. Fish and Wildlife Service (FWS) returned a threatened and endangered species list request for the Organ Mountains WSA showing the



## ORGAN MOUNTAINS

peregrine falcon. However, this species was never observed during BLM's wildlife inventory (1977-1978). Fort Bliss (1980) surveyed the military portions of the Organ Mountains for peregrines and concluded that there were none nesting. The FWS (Carley 1982) stated that they knew of no eyries, but that the location and habitat is such that peregrines might nest there in the future, and migrating birds probably stop over.

### F. Visual

The Organ Mountains form the eastern backdrop for the city of Las Cruces, the second largest urban area in New Mexico. The mountains are one of the most unique and spectacular topographic features in the region and visually dominate the landscape within a 25 to 30 mile radius.

Three scenic quality rating units describe the Organ Mountains WSA. The central part of the WSA, composed of the peaks and lower elevations of the mountains, has a Class A (high) rating. The higher elevations are characterized by steep, angular, barren rock outcroppings with massive, jagged, vertical intrusions dominating the highest peaks. More rounded peaks are less predominant but add interest to the strong ridgeline/sky interface. Moderately sloping rounded and boulder strewn hills characterize the lower elevations. Muted gray green and light browns are representative colors in the lower elevations while granitic gray to light pinkish gray typify the high pinnacles. The form and color of the vegetation is diverse. Low shrubs and grasses of light brownish green are the dominant ground cover. As the elevation increases, the vegetation changes from patches of yucca to juniper to oak to ponderosa pine, all of a dark green color. Streams flow intermittently and snow cover at the highest elevations is not uncommon during the winter months, particularly on the east-facing slopes.

The northeast part of the WSA has a Class B or moderate rating. This part of the WSA is characterized by low hills with rounded slopes and scattered boulders in light brown or tan. Light brown grasses and low shrubs are prevalent with occasional dark green small trees.

The southwest part of the WSA has a Class C or low rating. This area is a flat to gently rolling alluvial plain. Coloration is typically light reddish brown. Vegetation is primarily grasses and low shrubs in muted greens and light browns.

The WSA is within a Visual Resource Management Class II area.

### G. Cultural

There are no known cultural sites within the Organ Mountains WSA, although several are located along its perimeter. While there has been no formal survey of the area, it has received more visitation than most of the other WSAs combined. Any large, obvious prehistoric sites probably would have been reported by now.

There are historic reports of Apaches in the area. The main historic use of the area was for mining from 1849 to 1900. The WSA was the



scene of the first action of the Civil War in New Mexico as Confederate forces used the present Baylor Pass Trail to outflank Union forces; however, nothing remains of this event now. While there are no major sites in the area, the history contributes to the supplemental values of the area.

#### H. Air

Generally, the quality of air within the Organ Mountains WSA is good. The air quality in the WSA does not exceed State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

Activities within the Rio Grande Valley, located approximately 10 miles west of the WSA, could slightly lower the air quality, but the change probably would not be noticeable, nor would it lower the present Class II rating of air quality in the WSA.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

The mineral potential of the WSA is shown on Map 31-2. The locations of mining claims are shown on Map 31-3.

##### 1. Energy Minerals (Geothermal)

As of December 1, 1984, there were no mineral leases in the WSA.

Most of the area within the WSA is covered by special stipulations for energy minerals leasing (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983). The Baylor Recreation Area and part of the Organ Mountains Recreation Area are within the WSA. These areas are Not Open to Leasing. All but 473.49 acres of the Organ Mountains WSA is within the Organ Mountains Recreation Lands (OMRLs). Energy mineral leases let within the OMRLs would be covered by a protective stipulation for recreation values. Much of the WSA has also been identified as having special wildlife values which are also protected by a special stipulation. There are no mineral leases in the WSA.

There are no known occurrences of geothermal resources in the WSA. There has been no geothermal exploration. However, there are some positive geologic indicators: (1) the presence of the WSA within the Rio Grande rift; (2) the possible existence of a north-trending fault west of the western pediment of the Organ Mountains; and (3) the presence of Tertiary intrusive rocks.

The nearest geothermal occurrences are to the west along the Rio Grande Valley where hot water is rising along the Valley fault, a north-trending zone along the east side of the valley. However, according to Swanberg (1975), temperatures estimated from geothermometry studies of ground water in the area decrease rapidly away from the Valley fault. Based on the geologic environment of the WSA and Swanberg's (1975) study, the WSA may have low to moderate potential for geothermal resources. However, until there is direct evidence which confirms the existence of geothermal resources or the favorability for their occurrence, the potential is classified as low.

##### 2. Nonenergy Minerals

According to BLM mining claim records dated September 17, 1984, there are 47 pre-Federal Land Policy and Management Act (FLPMA) mining claims and 38 post-FLPMA claims in the WSA.

###### a. Base and Precious Metals (Lead, Silver, Copper, Gold, Zinc, Molybdenum, Tungsten)

The Organ mining district has been one of the most important metal producing areas in New Mexico. The district includes the Organ Mountains and the southern San Andres Mountains which are just north



of the WSA. Total production of the Organ district from 1854 to 1934 has been about \$2.5 million. Of this total, about \$1.15 million worth of production has come from the Stevenson-Bennett mine cherry-stemmed into the northeast part of the WSA. Lead, silver, and copper have been the major metals produced in the Organ district with some production of gold and zinc. There has been no production of metallics since about 1934.

Most of the mineral deposits in the Organ district are related to the Sugarloaf Peak quartz monzonite porphyry, one of the latest phases of the Organ batholith. The largest metallic deposits involve replacement of limestone and dolomite at or above the contact with the quartz monzonite porphyry. Major ore production has been from mines along the Torpedo-Bennett fault zone. This fault zone acted as a conduit which guided mineralizing fluids into contact with reactive Paleozoic strata.

There are three patented mining claims along the Torpedo-Bennett fault zone that are important because of their proximity to the WSA: the Memphis and Torpedo mines just north of the WSA and the Stevenson-Bennett mine. The Stevenson-Bennett mine (T. 22 S., R. 3 E., Section 11, SE $\frac{1}{4}$ ) has been the major producing mine in the Organ district. About \$1.15 million worth of lead, silver, and zinc ore has been produced. According to Dunham (1935), about 35,000 tons of lead-zinc ore remains at the mine. The Torpedo mine (T. 22 S., R. 3 E., Section 1, SW $\frac{1}{4}$ ) produced about \$800,000 worth of copper. A large body of low-grade ore probably exists at depth in the Torpedo deposit (Dunham 1935). The Memphis mine (T. 21 S., R. 3 E., Section 36, NW $\frac{1}{4}$ ) produced \$200,000 to \$400,000 worth of copper, zinc, and silver. According to Dunham (1935), enriched sulphide ores may be present at depth in the Memphis deposit.

Another replacement-type deposit along the western flank of the Organ Mountains is the patented Modoc mine (T. 22 S., R. 4 E., Section 31, SW $\frac{1}{4}$ ) which is just south of the WSA. This deposit involves replacement of Hueco limestone that is in fault contact with the Orejon andesite. About \$200,000 worth of lead was produced from the mine. Mineralization at the mine workings indicates that lead-silver ore may be present at depth (Dunham 1935).

Recent exploration interest in the Organ Mountains has been directed toward discovery of porphyry-type copper deposits and massive replacement orebodies (Seager 1981). Confidential drill hole data from the pediment area north of the town of Organ indicate that favorable host rocks occur in a shallowly-buried pediment that extends at least 1 $\frac{1}{2}$  miles west of the westernmost outcrops of quartz monzonite porphyry (Seager 1981). In the western portion of the WSA, rock outcrops and gravity data indicate that the pediment extends 2 to 3 miles west of the peaks of the Organ Mountains. According to Seager (1981), there is potential for molybdenum and lead-zinc replacement orebodies beneath the pediment. The pediment in the western flank of the WSA has remained essentially unexplored.

The Sugarloaf Peak quartz monzonite porphyry contains many mineralized veins and dikes (Seager 1981). At the Silver Coinage Vein (T. 21 S., R. 4 E., Section 29, SW $\frac{1}{4}$ ) north of the WSA, shipments of silver ore were made in 1934 (Dunham 1935). At the Poor Man's Friend vein



# ORGAN MTNS WSA (NM-030-074)

Proposed Action--All Wilderness Alternative

— WSA Boundary

□ BLM

□ Private

□ State

MAP 31-2

MINERAL RESOURCE POTENTIAL\*

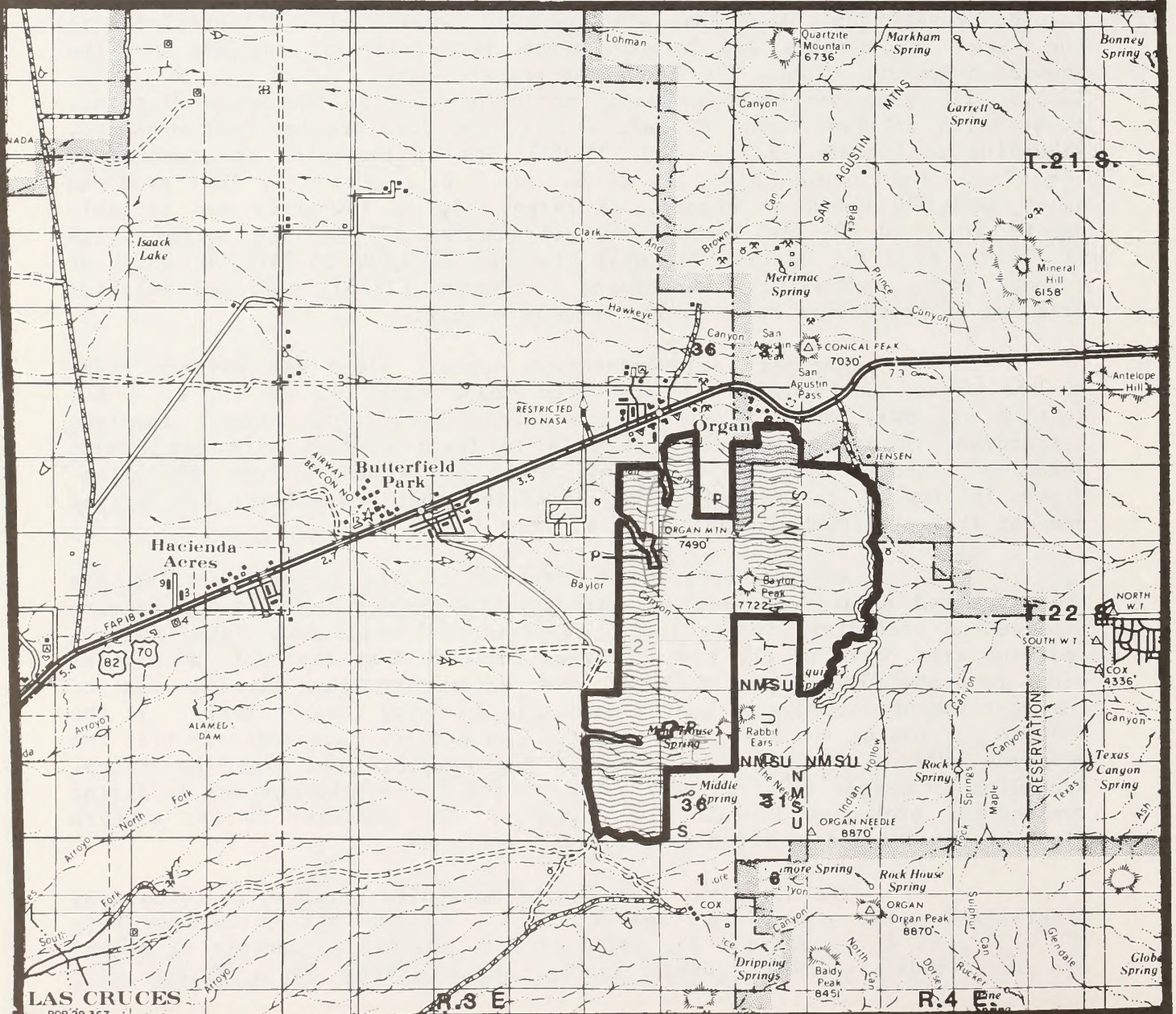
Base and Precious Metals

Fluorspar

Scale: 1/2 inch=1 mile

\*Areas of high (1) and moderate (2) mineral potential are shown for lands within the WSA; the potential may extend outside the WSA boundary. Areas of low potential are not shown.

Source: USDI BLM, Las Cruces District, January 1985





# ORGAN MTNS WSA (NM-030-074)

Proposed Action--All Wilderness Alternative

MAP 31-3

MINING CLAIMS AND MINERAL LEASES\*

— WSA Boundary

□ BLM

□ Private

□ State

Pre-FLPMA Mining Claims per Section  
Post-FLPMA Mining Claims per Section

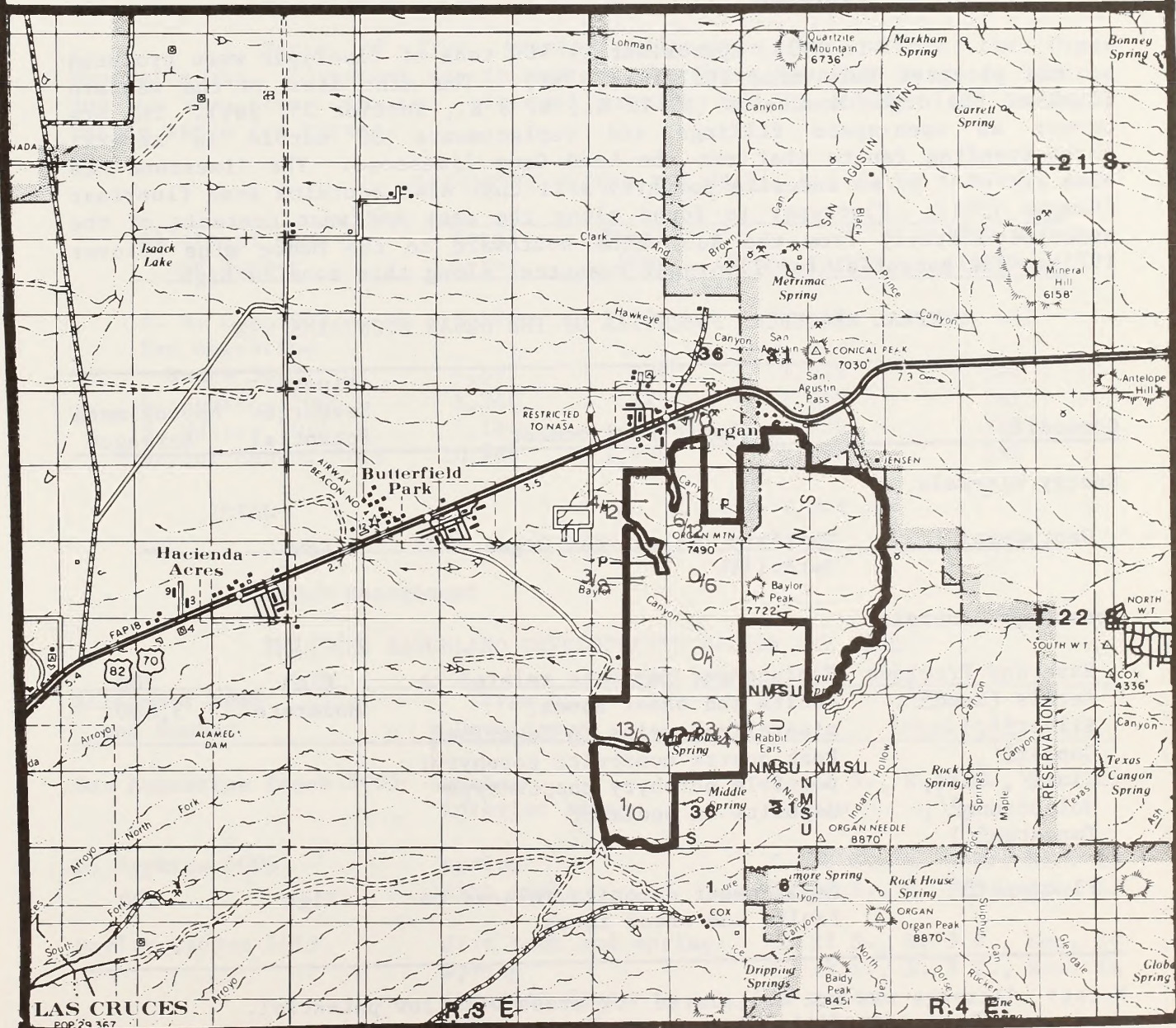
(Claim information from BLM records dated September 17, 1984; claims which overlap more than one section are counted in each section in which they occur.)

Scale: 1/2 inch=1 mile

FLPMA was passed October 21, 1976.

Source: USDI BLM, Las Cruces District,  
January 1985

\*No mineral leases exist in the WSA as of BLM records  
dated December 1, 1984.





## ORGAN MOUNTAINS

(T. 22 S., R. 3 E., Section 1, SE $\frac{1}{4}$ ) adjacent to the north boundary, ore samples revealed the presence of lead and silver (Dunham 1935). Within the northeastern portion of the WSA, there are northwest-trending veins that have not been explored.

The potential for discovering mineral resources in the WSA is encouraging. There is high potential for metallic mineral resources in the vicinity of the Torpedo-Bennett fault zone. Although the major surface deposits have already been found, there is potential for discovery of additional ore deposits at depth in this area. The entire western flank of the Organ Mountains, including the pediment, has moderate potential for metallic mineral resources. The northeastern portion of the WSA in the vicinity of T. 22 S., R. 4 E., Sections 7 and 18, has moderate potential for precious metals.

### b. Fluorspar

In 1933, approximately 400 tons of fluorspar were produced at the patented Ruby mine (Williams 1966). The mine lies on the western flank of the Organ Mountains (T. 22 S., R. 3 E., Section 25, SW $\frac{1}{4}$ ). The ore occurs as open-space fillings and replacements of marble in several north-trending faults that cut the Lead Camp limestone. The limestone has been intruded by an andesite porphyry sill that also contains some fluorspar (Seager 1981). Fluorspar is found along the east and west contacts of the andesite porphyry from the Ruby mine southward to the Modoc mine (Glover 1975). The potential for fluorspar resources along this zone is high.

### MINERAL RESOURCES POTENTIAL OF THE ORGAN MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Geothermal	Tertiary intrusives; Organ batholith	Low	--
Nonenergy Minerals			
Base and Precious Metals (Lead <sup>a</sup> / <sub>/</sub> , Silver <sup>a</sup> / <sub>/</sub> , Copper <sup>a</sup> / <sub>/</sub> , Zinc <sup>a</sup> / <sub>/</sub> , Gold, Molybdenum <sup>a</sup> / <sub>/</sub> , Tungsten <sup>a</sup> / <sub>/</sub> )	Replacement deposits related to faults and shear zones; mineralized veins in Sugarloaf Peak quartz monzonite porphyry; possible porphyry copper-type deposits in pediment	High Moderate	200 3,600
Fluorspar <sup>a</sup> / <sub>/</sub>	Replacement deposits related to faults and shear zones	High	100

Notes: \*Acreage was not calculated for areas with low potential.

<sup>a</sup>/These commodities are on the National Defense Stockpile Inventory of Strategic and Critical Minerals.



## B. Watershed

Water use within the Organ Mountains WSA is primarily by livestock and wildlife. There are two dirt tanks inside the WSA that utilize surface runoff and four developed springs that provide seasonal water (see Chapter III, Livestock Grazing). Additionally, several well facilities and dirt tanks are located just outside the WSA for livestock watering and limited domestic use.

The Organ Mountains WSA is within the Lower Rio Grande declared underground water basin and ground water use is administered by the New Mexico State Engineer.

## C. Livestock Grazing

### 1. Allotments

Parts of five grazing allotments are within the Organ Mountains WSA. Livestock use in most of the Organ Mountain range is limited due to the steep slopes. Licensed grazing use on public land includes cattle and a few horses.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
A. B. Cox 5002	15,180	1,504	68	.4%
San Augustine Ranch 5003	4,897	624	2,428	50%
D. Hopkins 5006	1,340	275	1,012	76%
S. Walter 5012	1,180	168	439	37%
Baylor Canyon 5013	10,988	1,428	3,197	29%
TOTAL			7,144	

### 2. Ranch Management

#### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
San Augustine Ranch 5003	spring interior fence	T. 22 S., R. 4 E., Sec. 20 ¾ mile
D. Hopkins 5006	spring dirt tank	T. 22 S., R. 3 E., Sec. 13 T. 22 S., R. 3 E., Sec. 13
Baylor Canyon 5013	dirt tank and spring spring interior fence	T. 22 S., R. 3 E., Sec. 24 T. 22 S., R. 3 E., Sec. 26 2¾ miles



## ORGAN MOUNTAINS

### Boundary Fences:

Baylor Canyon 5013 and Hopkins 5006	1 mile
Hopkins 5006 and Walter 5012	1½ miles
San Augustine Ranch 5003 and Walter 5012	¾ mile
Cox 5002 and Baylor Canyon 5013	1 mile

Note: a/Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

### D. Recreation

Most of the Organ Mountains WSA is within the Organ Mountains Recreation Lands (OMRLs). The OMRLs were designated as Class II General Outdoor Recreation Lands in 1971. The Baylor Recreation Site and portions of the Organ Mountains Recreation Area are within the WSA. These areas were classified for recreational purposes under the Classification and Multiple Use Act and are segregated from all forms of mineral entry. The OMRLs are designated limited to existing roads and trails for off-road vehicle (ORV) use. No motorized cross-country travel is allowed.

The Aguirre Spring campground is a developed recreation site less than ½ mile from the southeast boundary of the WSA. The campground is on New Mexico State University land across which BLM has a perpetual easement for recreational purposes and developments. The campground has 55 picnic/camping units and firewood is provided. There are plans to provide water facilities at the campground in the future. There are approximately 80,000 visitors to the Aguirre Spring Campground annually.

Two National Recreation Trails are in the OMRLs. The Pine Tree National Recreation Trail is on New Mexico State University land adjacent to the WSA. The Baylor Pass National Recreation Trail bisects the WSA. In addition to hiking, horseback riding is allowed on the Baylor Pass Trail.

The Mesilla Valley Track Club sponsors the Baylor Pass Run which has been held every fall since 1971. Over 170 runners participated in the race across Baylor Pass in 1983.

Parking facilities are available at the Aguirre Spring campground, Baylor Pass trailhead, and San Augustin wayside on U.S. Highway 70 for access into the WSA.

Recreational activities in the Organ Mountains include bird hunting, rock collecting, picnicking, camping, hiking, rock climbing, horseback riding, and geological, botanical, and zoological sightseeing.

A special permit deer hunt was held in the Organ Mountains in the past. However, the Organ Mountains were closed to deer hunting in 1983. Bird hunting takes place along the slopes of the Organ Mountains in the northeast and southwest parts of the WSA.

Technical rockclimbing opportunities in the Organ Mountains are nationally significant. Climbing in the Organ Mountains is done on quartz



monzonite, similar to the granite in Yosemite National Park. Most of the climbing opportunities are between Baylor Pass and the Organ Needle, and in the Sugarloaf area east of the WSA. The Southwest Mountaineers, a local group from Las Cruces, have 60 members with 30 or so who are avid climbers. Groups of 20 or more persons climb in the Organ Mountains two or three times a month, while small groups of three to five get out on their own every week.

#### E. Education/Research

In the higher elevations, there is a possibility for dendrochronological studies of the ponderosa pine by the Tree Ring Laboratory of the University of Arizona in connection with climatic reconstruction work being done by Dr. Ferguson.

#### F. Realty Actions

There are sections of three power transmission lines that border the Organ Mountains WSA. On the north, Plains Electric Generation and Transmission Cooperative, Inc. has a right-of-way (ROW) for a 115kv transmission line. This ROW has recently been amended for route changes, but does not enter the WSA. El Paso Electric Company has ROWs for transmission lines along the northeast boundary of the WSA and along the road to the Stevenson-Bennett mine, which is cherry-stemmed into the northwest part of the WSA.

Valley Transit Mix, Ltd. has a temporary use permit for approximately 10 acres of Federal land adjacent to the Stevenson-Bennett patented mine in T. 22 S., R. 3 E., Section 11, SW $\frac{1}{4}$ SE $\frac{1}{4}$ . The company is removing the privately-owned road building and raw construction material that has been stockpiled in this area illegally or under temporary permit at least since 1974. The permit expires October 31, 1985.

#### G. Wildlife

There are no existing wildlife developments in the Organ Mountains WSA. However, a deer Habitat Management Plan is proposed in the Southern Rio Grande Management Framework Plan (MFP) (BLM 1981) for the Organ Mountains.

According to Andy Sandoval of the New Mexico Department of Game and Fish, survey work will be pursued for desert bighorn sheep. If bighorn sheep are found, more will probably be put into the Organ Mountains to supplement this native herd.

#### H. Visual

The Southern Rio Grande MFP (BLM 1981) contains a decision to designate the Organ Mountain Scenic Area (8,947 acres) as an Area of Critical Environmental Concern (ACEC) for visual resources. (See Map 31-1 for general location of the ACEC.)

The Organ Mountains meet the two criteria required for an area to be considered as a potential ACEC for scenic values: (1) the area rates



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high (Class A) in scenic quality and (2) the area has a rating of five for scarcity. Class A scenic quality ratings are assigned to areas that combine the most outstanding characteristics of each of the following seven rating factors: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modifications. The Organ Mountains were rated high for scarcity because they are recognized as an uncommonly scenic geologic formation within the Basin and Range physiographic province. The high visual sensitivity is further supported by the number of users. The Organ Mountains are viewed daily by a resident population in excess of 50,000 people. They are traversed by U.S. Highway 70 with an average annual daily traffic (AADT) volume of over 5,000 vehicles and paralleled by Interstate Highway 25 with an AADT of over 11,000 vehicles. Recreation use within designated areas exceeds 80,000 annual visits. A yet to be determined number of dispersed recreation users in the Organ Mountains will further increase the visitor use figure. The scenic resources of the Organ Mountains are also important in terms of people's perceptions and attitudes toward the management of that resource. As documented in the Southwestern New Mexico Socio-Economic Profile prepared by Harbridge House Inc. (October 1978), residents of Las Cruces share the attitude that the Organ Mountains should be preserved and protected, citing them as centers of recreational activity and a source of considerable civic pride.

The environmental impacts of designating the ACEC were analyzed in the Draft Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (BLM 1983) for energy minerals leasing, rangeland management, and ACECs. Approval of the plan (May 1984) constitutes formal designation of the Organ Mountains Scenic Area. If the Organ Mountains are designated wilderness, the ACEC designation would be cancelled without further planning action. The special management objectives of the ACEC would be to protect, prevent irreparable damage to, and enhance the scenic values of the Organ Mountains. The special management requirements of the ACEC include retention of the existing closure to plant collection and sale, restriction of vehicle use to existing roads and trails, and retention of the existing segregation of approximately 1,479 acres from all forms of mineral entry (under the Classification and Multiple Use Act of 1964). Additional special management requirements include management of the ACEC as a Visual Resource Management (VRM) Class I and removal of the exposed gravel piles near the Stevenson-Bennett mine. The remaining 6,017 acres of the ACEC would be withdrawn from locatable and saleable mineral entry subject to valid existing rights. An additional 2,753 acres of Federal mineral estate on the north, east, and south boundaries of the ACEC would also be withdrawn from locatable and saleable mineral entry. A No Surface Occupancy stipulation would be attached to energy minerals leases. No new rights-of-way would be authorized. Cooperative agreements would be sought with the Regents of New Mexico State University and the State Land Office to ensure that management of University and State lands adjacent to the ACEC are managed as a VRM Class I.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

The natural appearance of the Organ Mountains WSA is affected by a variety of the imprints of man: rangeland developments, access routes, historic mining activity, the outside sights of developments along the north boundary of the WSA, and the city of Las Cruces and White Sands military base. In most cases, the influence of these imprints is mitigated by vegetative and topographic screening and by their location in relation to the WSA's boundaries and other imprints.

The earthen dams along the west and east sides of the Organ Mountains are generally well camouflaged by vegetative and topographic screening and do not detract from the natural appearance of the WSA. Approximately 8 miles of barbed wire fence are within the WSA and on the boundary. Most have wooden posts which blend in with the landscape.

The naturalness of the WSA has been affected somewhat by the evidence of historic mining activity along the west face of the Organ Mountains. The road to Mine House Spring is cherry-stemmed out of the WSA. Past Mine House Spring, the route is unmaintained and provides access to the patented Ruby mine that is inactive. The tailings piles, structures, and mine entrance are topographically screened from the rest of the WSA.

The Stevenson-Bennett mine is located at the base of a ridge in the northwest part of the WSA. The road, power transmission line and right-of-way (ROW), and mine are cherry-stemmed out of the WSA. The large cut in the hillside is several hundred feet long. The mine cut and large piles of gravel next to the mine create a visual impact when viewing the area from the north and west, but the topography camouflages the mine and gravel piles from most of the WSA.

Imprints of man originating from outside the WSA do not significantly affect the overall natural appearance of the WSA, although developments in San Augustin Pass and the cities of Organ and Las Cruces, and the White Sands Missile Range can be seen from the WSA.

The developments in San Augustin Pass include evidence of mining activity, U.S. Highway 70, several hundred buildings, and two powerlines with double post structures 20 and 50 feet tall. These imprints negatively impact the northern part of the WSA but are screened topographically from most of the WSA, as is the town of Organ. Although the city of Las Cruces and the White Sands military base contrast with the natural appearance of the WSA, they are far enough removed that they do not dominate the view and should heighten public awareness and appreciation of the natural appearance of the Organ Mountains WSA.



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The major topographic features of the WSA remain unaffected by the imprints of man. Rugged canyons and steep ridges have restricted development to the gentler slopes along the eastern and western boundaries. The Organ Mountains WSA appears to have been affected primarily by the forces of nature and the imprint of man's work is substantially unnoticeable.

### b. Solitude

The Organ Mountains WSA provides outstanding opportunities for solitude. The rugged topography of the mountain range bisecting the WSA creates numerous opportunities for solitude. Baylor Peak rises over 2,700 feet above the surrounding plains and half a dozen major ridges descend from the backbone of the range, with each breaking off into countless smaller ridges with drainages between each one. As a result, a great deal of topographic relief is present and topographic screening and opportunities for seclusion are offered in almost every drainage and on many ridges. Along the eastern and western boundaries, the terrain is less rugged; however, there is still a 10-20 degree slope and several small arroyos and ridges which offer a moderate amount of topographic screening.

Opportunities for solitude in the northern end of the WSA are slightly impacted by the sounds of traffic on U.S. Highway 70. Topographic features generally block the sound out of the drainages.

### c. Recreation

The Organ Mountains Recreation Lands (OMRLs) have been intensively managed for recreational purposes since 1971 and nonmotorized activities constitute the primary existing use within that part of the OMRLs included in the WSA. (See Chapter III, Recreation.)

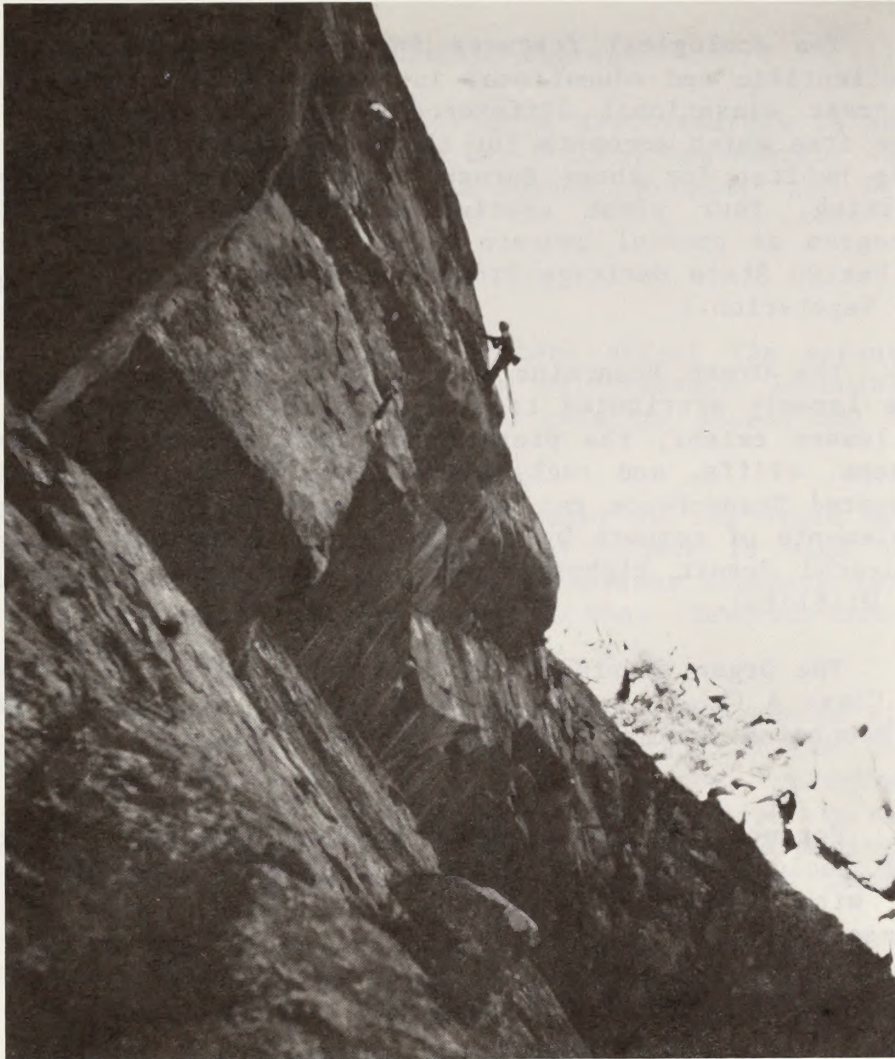
Opportunities for primitive and unconfined types of recreation in the Organ Mountains WSA are enhanced by several factors: size and boundary configuration, topographic relief, opportunities for challenge and risk, vastness of scale, opportunities to use outdoor skills, the quality and diversity of the recreational resource and supplemental values.

The majority of the public land in the WSA is blocked up so that visitors may spend an afternoon or weekend hiking and exploring the WSA. In addition, New Mexico State University land south and east of the WSA are managed by the BLM for both developed and primitive types of recreation.

The topography of the Organ Mountains is so rugged and diverse that visitors traveling off trails have excellent opportunities for challenge and risk. The vastness of scale in the WSA is significant. Baylor Peak rises over 2,700 feet above the surrounding plains and the mountain range dominates the landscape for miles around.

The lack of recreational facilities within the WSA offers excellent opportunities to use outdoor skills and interact with a natural environment.





Climbers on the Citadel. (Photo courtesy of Paul Kemp)

A diversity of high quality recreational activities can be accommodated within the WSA. The rugged terrain offers outstanding opportunities for horseback riding and day hiking, and both individuals and groups often use the area for these purposes. Rockclimbing opportunities in the Organ Mountains are nationally significant and there are also several rock faces popular for rockclimbing in the southern half of the WSA. Opportunities for sightseeing geological features are excellent throughout the WSA and opportunities for sightseeing botanical features are present around Baylor Pass.

The Organ Mountains WSA offers outstanding opportunities for a primitive and unconfined type of recreation in terms of both quality and diversity of available opportunities.

## 2. Special Features

The Organ Mountains WSA contains special ecological and scenic features.



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The ecological features include both vegetation and wildlife values of scientific and educational interest. Within the Organ Mountains, there are great elevational differences. As a result, three life zones occur in the area which accounts for the great diversity in vegetation. The WSA provides habitat for three Bureau sensitive plant species proposed for Federal listing, four plant species selected by the New Mexico State Heritage Program as special concern elements, and one plant species chosen by the New Mexico State Heritage Program as a State sensitive species. (See Chapter II, Vegetation.)

The Organ Mountains also have a diverse wildlife community. This can be largely attributed to the elevation and vegetation differences and, to a lesser extent, the presence of special habitat features such as springs, seeps, cliffs, and rocky areas. The WSA provides habitat for the State endangered Trans-Pecos rat snake and four species of endemic molluscs listed as elements of concern by the New Mexico State Heritage Program. The State endangered desert bighorn sheep may also occur in the area. (See Chapter II, Wildlife).

The Organ Mountains WSA has outstanding scenic features. The area has a Class A (high) scenic quality rating. Most of the WSA is within the Organ Mountains Scenic ACEC for visual resources. (See Chapter II, Visual.)

Potential future projects of scientific and educational value in this WSA include dendrochronological studies of the ponderosa pine in connection with climatic reconstruction work. (See Chapter III, Education/Research.)

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Organ Mountains WSA as being in the Chihuahuan Desert Province with a potential natural vegetation of juniper-pinyon woodland.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
western ponderosa forest	163
mountain mahogany oak scrub	3,362
Trans-Pecos shrub savanna	3,619



b. Distance From Population Centers

The Organ Mountains WSA is approximately 1½ hours driving time from El Paso, Texas; ½ hour from Las Cruces, New Mexico; 4½ hours from Albuquerque, New Mexico; 5½ hours from Tucson, Arizona; and 7½ hours from Phoenix, Arizona.

B. Manageability

Both positive and negative factors affect the potential of the Organ Mountains WSA to be managed as wilderness: locatable minerals potential, existing minerals segregations, existing access and recreational facilities, and visibility of boundaries.

Strategic minerals are known to occur in the Organ Mountains WSA and there has been production in the past. There is high and moderate potential for base and precious metals and fluorspar deposits along the west and northeast slopes in the Organ Mountains WSA. Several mines along the west side are patented.

The Stevenson-Bennett-San Augustin group of patented mining claims have been cherry-stemmed out of the WSA (50 acres) and the Ruby patented mine is a 40-acre inholding. In addition, several patented mines in T. 22 S., R. 3 E., Section 12, W½ (approximately 41 acres) are surrounded on the east and west sides by the WSA. Numerous unpatented mining claims are located around the patented mines and along the west face of the mountains.

There are both pre-Federal Land Policy and Management Act (FLPMA) and post-FLPMA unpatented mining claims within the Organ Mountains WSA. The presence of these claims affects the manageability of the WSA in two ways:

1. The FLPMA specifies that mining uses that existed on the date of approval of the Act may continue in the same manner and degree during the time that an area is under wilderness review. Such mining uses are grandfathered and may continue even if the uses would impair wilderness suitability.

In addition, mining claimants may be recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976, and the claimant can show BLM that the claim continues to be supported by such a discovery. Valid existing rights convey a more liberal development standard than grandfathered rights in that activities on valid claims are not limited to the same manner and degree. When it is determined that the valid existing rights can be exercised only through activities that will impair wilderness suitability, the activities will be regulated only to prevent unnecessary and undue degradation. If any of the pre-FLPMA claims in the Organ Mountains WSA which meet the above criteria are developed, wilderness values could be degraded before the area is designated wilderness.



2. Once an area is designated wilderness, the provisions of the Wilderness Act of 1964 and the Wilderness Management Policy (WMP) (BLM 1981) apply. Under the Wilderness Act and the WMP, holders of mining claims validly established in an area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations, "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the valid existing rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, wilderness values could continue to be degraded after the area is designated wilderness.

The patented mines are presently inactive and their impact upon manageability is insignificant. It is difficult to predict when or if the minerals in the Organ Mountains will be economically exploitable. However, reopening the patented mines and full-scale development of the mining claims would certainly degrade wilderness values.

Positive factors influencing the manageability of the Organ Mountains WSA include the approximately 1,479 acres of the WSA (T. 22 S., R. 3 E., parts of Sections 13, 14, 23, 24 and T. 22 S., R. 4 E., parts of Sections 6, 8, 17, 20) which have been segregated from mining and mineral leasing. Retention of this segregation (under the Classification and Multiple Use Act of 1964) would enhance efforts to preserve the wilderness character of the WSA since it is more restrictive than that portion of the 1964 Wilderness Act which allowed wilderness areas designated in 1964 to remain open for mineral leasing and mining claim location through December 31, 1983.

The manageability of the WSA is enhanced by the presence of approximately 2,089 acres (T. 22 S., R. 4 E., Sections 19, 29, 30, and part of 31) belonging to New Mexico State University (NMSU) that are contiguous to the south and southeast boundaries of the WSA (see Map 31-1 for land status). The NMSU lands are very rugged and densely vegetated with ponderosa pine, oak, and juniper. These lands are managed by the BLM for recreational purposes under a perpetual easement from the University and present administration enhances the manageability of the WSA. An additional area of approximately 1,760 acres of Federal land is contiguous to the NMSU land on the east. This area encompasses Sugarloaf Peak and Indian Hollow. This area is also very rugged, densely vegetated, and managed by the BLM primarily for recreation. Most of this area is segregated from mineral entry. In summary, the present administration by BLM on the approximately 3,849 acres adjacent to the southeast boundary of the WSA would enhance the wilderness manageability of the Organ Mountains WSA.

The WSA is accessible from several roads. The Aguirre Spring Road and West Side access road constitutes the eastern and western boundaries of the WSA, and U.S. Highway 70 lies a half-mile to the north. Recreational facilities at the Aguirre Spring campground attract high levels of use, some



of which spills over into the WSA. Parking facilities are available at the Aguirre Spring campground, on the West Side road at the Baylor Pass Trailhead (T. 22 S., R. 3 E., Section 14), and at the San Augustin wayside on U.S. Highway 70 (T. 22 S., R. 4 E., Section 6). No further access is necessary as visitors may enter and traverse the WSA without leaving land administered by the BLM.

The roads to the Stevenson-Bennett mine and Mine House Spring have been cherry-stemmed out of the WSA. The gate on the road to the Stevenson-Bennett mine is usually locked and the road to Mine House Spring requires a four-wheel drive vehicle. These roads may cause manageability problems by allowing vehicles access into the WSA.

On-the-ground management of the WSA would be enhanced by the visibility of its boundaries. The eastern and western boundaries of the WSA are for the most part alongside Government maintained roads, while portions of the northern boundary lie along a powerline. Part of the southern boundary lies along a dirt road while the southeastern portion of the WSA borders the NMSU recreation lands. Since physical boundaries would be easier to identify than "invisible" legal lines, conflicts resulting from unintentional trespass by wilderness visitors onto private land or by unauthorized uses into the wilderness area should be minimal.

Approximately 474 acres of private land (south of the power transmission line in T. 22 S., R. 3 E., Section 1, SE $\frac{1}{4}$ , Section 12, E $\frac{1}{2}$ , and T. 22 S., R. 4 E., Section 6, SW $\frac{1}{4}$ ) and 520 acres of State land (in T. 22 S., R. 3 E., Section 36) should have a high priority for acquisition if the area is designated wilderness. The private and State lands are contiguous to the north and south boundaries of the WSA, respectively, and would enhance the manageability of the area as wilderness. Approximately 131 acres of patented mining claims (in T. 22 S. R. 3 E., Sections 11-14 and 25) within and adjacent to the the WSA should also be acquired. The acquisitions would also enhance the topographic integrity of the area and eliminate the potential for impacts on wilderness values as a result of nonwilderness uses on the non-Federal lands.

The Organ Mountains WSA could be managed in the long-term to preserve existing wilderness values. The WSA is within the Organ Mountains Recreation Lands which are managed primarily for recreation, portions of the WSA are already segregated from mineral entry, the area is accessible, and its boundaries easily identifiable on the ground.



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### V. CONSULTATION AND COORDINATION

#### A. Public Involvement Overview

Personal letters, form letters, and petitions were received on the Organ Mountains unit during the public comment periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). Maps were included with the comments.

Approximately 71 percent of the personal letters favored wilderness review of the area. Supporting reasons listed lack of roads, few imprints of civilization, excellent recreation and solitude, interesting terrain, and the supplemental values of endangered species as justification for further wilderness study. Other comments pointed out that wilderness areas near population centers are needed and that the Organ Mountains need protection.

Approximately 29 percent of the personal letters opposed wilderness review of the area. Imprints of man's activities, lack of outstanding opportunities for solitude or primitive recreation, presence of roads, and mining conflicts were given as reasons for opposing further wilderness review.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in Las Cruces District (BLM 1983), 26 personal letters and 17 form letters were received indicating support for wilderness designation of the Organ Mountains WSA. Nine personal letters opposing wilderness designation were submitted.

Five of the personal letters in favor of wilderness for the Organ Mountains listed no supporting reasons. Most of the specific comments favoring wilderness designation in both the personal and form letters reiterated BLM's rationale for recommending the Organ Mountains WSA suitable. Major supporting reasons included high quality wilderness values, scenic values, diverse wildlife habitat and plant communities, potential desert bighorn sheep habitat, and scientific and educational values. The New Mexico Natural History Institute, whose primary interest is in building a system of natural areas for New Mexico, indicated full support for wilderness designation of the Organ Mountains, adding, "This is a very important area in state natural area planning because of rare species and other characteristics well discussed in the DEA."

Comments on the potential manageability of the area included: good access and boundary configuration, contiguous New Mexico State University land enhances manageability, and acquisition of adjacent private land should have a high priority. Pro-wilderness comments regarding resource conflicts generally supported BLM's judgment that the wilderness values of the Organ Mountains are more important than mineral values. A number of comments asserted that the Organ Mountains WSA should be designated wilderness because of its proximity to Las Cruces and other urban areas and that preservation of the area will become more significant as these areas grow.



Comments on the No Action (ACEC) Alternative varied. A number of comments indicated support for both wilderness and the Organ Mountains Scenic ACEC, stating that the two designations would offer the best protection from mining activities. The New Mexico State Heritage Program suggested that an ACEC to protect the endemic molluscs in the Organ Mountains might be appropriate in lieu of wilderness designation. The State Department of Agriculture stated, "It is our opinion that the special designation as an ACEC would be adequate in protecting the outstanding qualities of both areas without completely removing the availability of certain range improvement techniques which would enhance the resources ... we recommend the No Action Alternative ... ."

Comments in the nine personal letters opposing wilderness designation of the Organ Mountains WSA primarily focused on the mineral potential of the area. These comments included the following reasons: strategic minerals are known to occur in the WSA; there has been mineral production in the past; and the number of claims and assessment work in the area is evidence of the strong interest in the mineral potential of the Organ Mountains. Other comments observed; "The fact that the area had to be cut up with cherry-stems to exclude some patented mining claims and a large area left in the center for the same reason, should make the mineral potential obvious", and "In these times of depressed economic activity, ... area cannot be profitably mined, ... doesn't mean that this condition will last forever." Another comment stated that the area of mineral potential in the Organ Mountains "is well below the beautiful peaks of the Organs and will in no way adversely affect them or disturb their beauty."

Detailed information on proven and indicated reserves of ore and the grade of fluorspar at the Ruby mine and associated unpatented claims was submitted, as well as a list of uses for fluorspar and a copy of a letter to the BLM Director nominating the Organ Mountains as an Area of Critical Mineral Potential. Information regarding the Modoc mine, which is south of the WSA, and two geological reports (Dunham 1935, reprinted 1980; Seager, 1980) were also submitted.

## B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to energy minerals (geothermal), water, soils, vegetation, wildlife, cultural, air, recreation, realty actions, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



SUMMARY OF SCOPING

<u>Alternatives Raised and Set Aside</u>	<u>Reasons for Not Including this Alternative</u>
Amended Boundary	During the initial preparation of the Organ Mountains Wilderness Analysis Report, an Amended Boundary Alternative was considered that excluded split estate lands (Federal surface/non-Federal subsurface) from that portion of the WSA recommended suitable for wilderness designation. The objective of this alternative was to improve manageability. However, the Secretary's Policy Announcement of December 28, 1982, resulted in the deletion of split estate lands from wilderness consideration and eliminated the need for analysis of the Amended Boundary Alternative.

<u>Issues Raised and Set Aside</u>	<u>Reasons for Not Conducting a Detailed Analysis</u>
Visual	This issue is not included in this document because it was analyzed in detail in the Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (BLM 1983).
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.

<u>Alternatives Selected for Detailed Analysis</u>	<u>Reasons</u>
All Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.
No Action/No Wilderness	Required by the BLM Wilderness Study Policy.

<u>Issues Selected for Detailed Analysis</u>
Primary issues identified for the Organ Mountains WSA are the quality of the area's wilderness values and special features, potential wilderness manageability, the need for wilderness areas near population centers, and the area's high potential for strategic mineral resources. These issues were generally discussed in terms of the value of the Organ Mountains for wilderness versus the value of the area's mineral resources.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness (Proposed Action)

Under this alternative, the entire 7,144 acres of public land within the Organ Mountains WSA would be recommended suitable for wilderness designation. (See Map 31-1 for location of the WSA boundary.)

If designated wilderness, the existing uses and activities in the area and potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the BLM's Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the existing wilderness values present in the area with significant long-term Congressional protection. The area would generally be managed to maintain its natural appearance, outstanding opportunities for solitude and primitive recreation, and special ecological and scenic features in the long-term. Management of the deer population under a Habitat Management Plan and the transplant of desert bighorn sheep in the WSA would enhance the special wildlife features of the area.

However, wilderness values could be degraded if development activities occur on valid mining claims. The area's natural appearance and scenic features would be degraded by access roads and mine dumps. Opportunities for solitude and primitive recreation would be degraded by the increased presence of man and vehicles and higher noise levels. Over half of the WSA has high and moderate potential for base and precious metals and fluorspar. Mining activities on valid claims could result in significant degradation of wilderness values.

#### 2. Impacts to Nonenergy Minerals

Base and precious metals and fluorspar (mineral commodities on the National Defense Stockpile Inventory of Strategic and Critical Minerals) are known to occur in and around the Organ Mountains WSA and several mines along the west face of the Organ Mountains are patented. There has been production from these mines in the past. Under this alternative, development work, extraction, and patenting of mining claims existing in the Organ Mountains WSA as of the date of designation would be allowed if the claims are determined to be valid. A mineral examination and subsequent mineral report must confirm that as of the date of designation, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine. At the present time, there are approximately 98 existing mining claims in the WSA. Estimates as to the number or locations of claims that would prove to be valid are beyond the scope of this report, as are predictions of the impacts of mining activities on such claims; however, it is possible that some of the claims in the areas of high and moderate potential for base and precious metals and fluorspar are valid.



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Undue and unnecessary degradation of wilderness character would not be allowed, and the use of mechanical and motorized equipment would be authorized only if there are no reasonable alternatives. Plans of Operation for mining on valid existing claims would include reclamation measures to provide for restoration of the disturbed area to a condition that appears to be natural. During exploration or development activities, the mining companies may incur additional costs of operation depending on restrictions on acceptable mining methods and the type and location of necessary access.

It is assumed that no new exploration, prospecting, or location of additional mining claims would be allowed after wilderness designation. Mineral trends could not be followed outside of the existing valid claim boundaries. Full development of the mining district could not take place under this alternative. Most of the minerals are on the list of strategic and critical minerals. Wilderness designation could affect opportunities for exploration and development in the following areas: 200 acres with high potential and 3,600 acres with moderate potential for base and precious metals and 100 acres with high potential for fluorspar.

### 3. Impacts to Livestock Grazing

Motorized access on vehicle trails within the designated wilderness would not be permitted. This prohibition would affect only 1 mile of existing vehicle trail. Checking livestock would be on foot or horseback.

Rangeland developments in the area do not have existing access and cross-country vehicle use is presently prohibited. Authorization for vehicular access or for the use of mechanized equipment to maintain existing rangeland developments would be given only if there were no practical alternatives and would be on a permit basis.

The impacts to livestock operators would be insignificant and would consist primarily of the minor inconveniences of securing permits.

### B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 7,144 acres of public land in the Organ Mountains WSA would be recommended unsuitable for wilderness designation. If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

Under the No Action/No Wilderness Alternative, all but 593 acres along the western periphery of the WSA would be within the designated Organ Mountains Scenic ACEC. The special management objectives and requirements for the ACEC are described in Chapter III, Visual.

The ACEC would be withdrawn from saleable and locatable mineral entry subject to valid existing rights. Estimates as to the number or locations of claims that would prove to be valid are beyond the scope of



this report, as are predictions of the impacts of mining activities on valid claims.

### 1. Impacts to Wilderness Values

The wilderness values of the Organ Mountains WSA would not be provided with long-term Congressional protection. Approximately 6,690 acres in the Organ Mountains WSA would be within the 8,947 acres administratively designated as the Organ Mountains Scenic Area ACEC. Since the objectives of the ACEC are to protect, to prevent irreparable damage, and to enhance scenic values, the ACEC would provide all but 593 acres along the west boundary of the WSA with administrative protection, at least in the short-term. However, management of the area as an ACEC would be subject to administrative change in the long-term.

The enhancement provisions of the ACEC special management requirements would benefit the special scenic values of the WSA by requiring removal of the large gravel piles adjacent to the Stevenson-Bennett mine.

The mineral withdrawal would provide the natural values, outstanding opportunities for solitude and primitive recreation, and special ecological and scenic features in a major part of the WSA with some protection from the surface disturbance associated with mineral development. However, natural values could be degraded as described under the All Wilderness Alternative if exploration and development occurs on valid mining claims.

Under this alternative, the impacts to wilderness values could be significant in the long-term because protective management of the area would not be ensured through Congressional designation.

### 2. Impacts to Nonenergy Minerals

Under this alternative, the ACEC would be withdrawn from locatable mineral entry. Therefore, the impacts to nonenergy minerals in the ACEC would be the same as those described under the All Wilderness Alternative.

The 593 acres outside the ACEC would remain open to exploration and mining claim location. This area has moderate potential for base and precious metals.

### 3. Impacts to Livestock Grazing

There would be no impacts to livestock grazing under this alternative.







## APPENDIX 32

### ROBLEDO MOUNTAINS WSA (NM-030-063)

#### I. GENERAL DESCRIPTION

##### A. Location

The Robledo Mountains Wilderness Study Area (WSA) is located in central Dona Ana County. The WSA is approximately 8 miles northwest of Las Cruces, New Mexico, on the west bank of the Rio Grande.

The U.S. Geological Survey (USGS) topographic map covering the WSA is the Las Cruces, New Mexico quadrangle at the 15-minute scale.

##### B. Climate and Topography

The Robledo Mountains WSA is characterized by an arid, continental climate with mild winters and pleasant to hot summers.

Average annual precipitation in the area is slightly less than 9 inches, however, a wide variation in annual totals is characteristic of arid climates. More than half of the total annual precipitation occurs from July to September. Rainfall during these months usually is from convective thundershowers that are commonly brief and intense.

During the summer months, daytime temperatures quite often exceed 100°F. The average monthly maximum temperature during July, the warmest month, is in the middle 90's. In January, the coldest month, average monthly minimum temperature is in the middle 20's.

Winds generally predominate from the southeast in summer and from the northwest in winter. Wind speeds are usually moderate. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

This WSA contains most of the Robledo Mountains, a north-south trending fault block. Lookout Peak and Robledo Mountain are the prominent topographic features in the WSA. Maximum and minimum elevations within the WSA are about 5,876 feet and 4,300 feet, respectively. The WSA is characterized by rugged, steep canyons and southward dipping cuestas.

##### C. Land Status

The WSA contains 12,811 acres of public land. There are no State or private lands within the WSA boundary. (See Map 32-1 for land status within the WSA boundary.)

##### D. Access

There is no legal access to the Robledo Mountains WSA. County Road D59, which branches south off of State Highway 85 about  $\frac{3}{4}$  of a mile



# ROBLEDO MOUNTAINS WSA (NM-030-063)

Proposed Action-- No Action/No Wilderness Alternative

- WSA Boundary
- BLM
- State

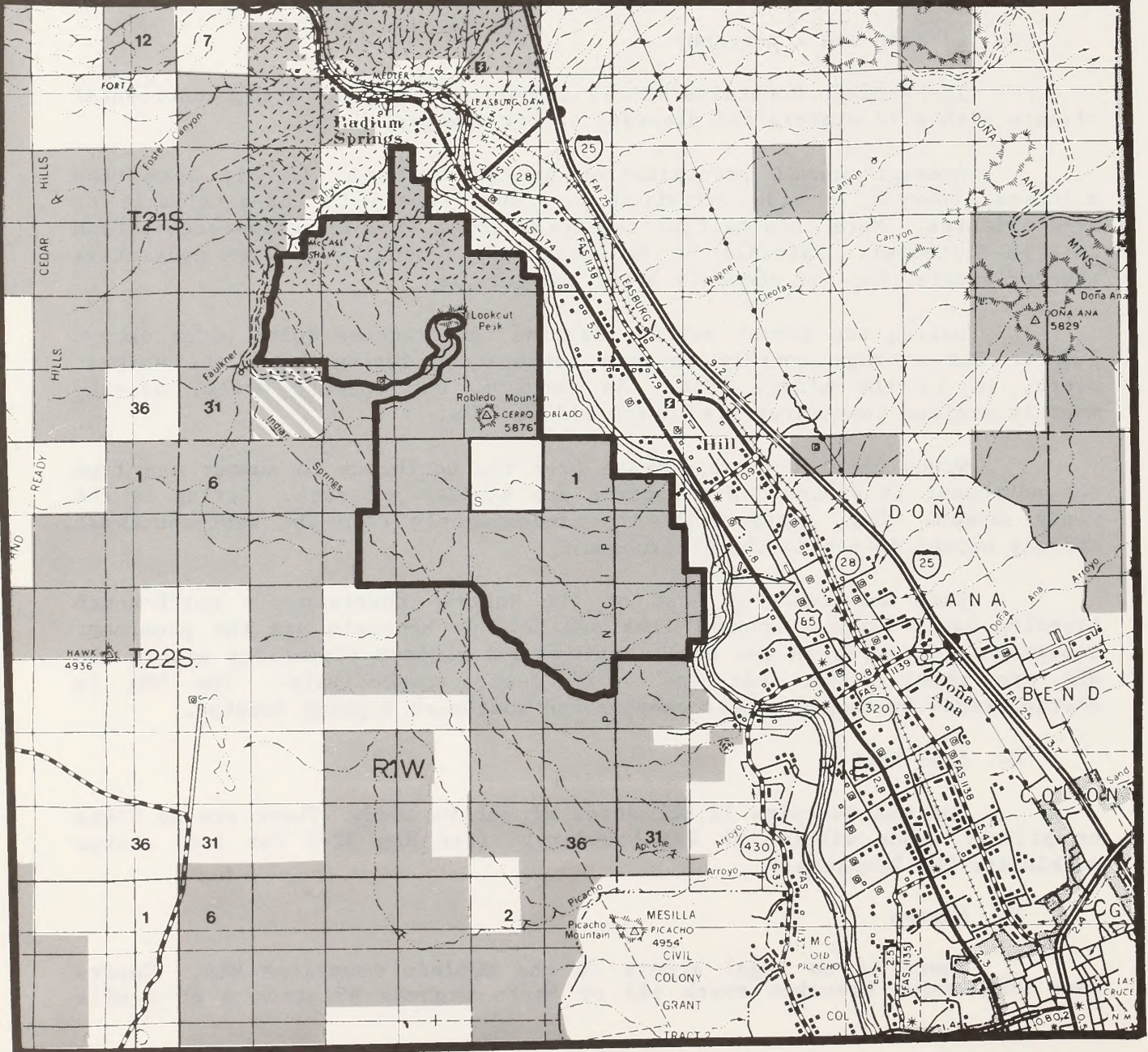
State ownership is identified only inside the WSA boundary.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District, January 1985.

## MAP 32-1 LAND STATUS

- Lands removed from WSA status after reinventory
- Radium Springs KGRA
- BLM surface/Non BLM subsurface





west of Radium Springs, crosses the State section on the northern boundary of the WSA. Physical access is available by hiking about  $\frac{1}{2}$  mile south from D59 to the north boundary of the WSA.

Physical access to the southern boundary of the WSA is available by four-wheel drive trails branching off of State Highway 430.

#### E. Proposed Action, Alternatives, and Issues

##### DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	No Action/No Wilderness (Proposed Action)
°Manage 12,811 acres as wilderness.	°Manage 12,811 acres without wilderness protection.
-Attempts would be made to acquire 640 acres of State land surrounded on three sides by the WSA.	-No special attempts would be made to acquire adjacent non-Federal lands.
-Close 2 miles of vehicle trails.	-Vehicle use would be allowed to continue.
-12,811 acres would be closed to oil and gas and geothermal leasing.	-12,811 acres would be open to oil and gas and geothermal leasing.
-12,811 acres would be closed to mining claim location.	-12,811 acres would be open to mining claim location.
-12,811 acres would be closed to mineral material sales. The closure would encompass an area of 1,300 acres with high potential for building stone.	-Mineral material sales of building stone could be permitted.
-Current levels of authorized grazing use would continue.	-Current levels of authorized grazing use would continue.
-Require permits for vehicular access to maintain 1 dirt tank and a trough.	
-1 $\frac{1}{2}$ miles of allotment boundary fence (between F. Burke (3008) and Cohorn and Johnson (3040)) could be constructed if nonimpairing and necessary for wilderness or rangeland protection.	



## SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues	
	Mineral Development	Wilderness Values
All Wilderness (12,811 acres)	Opportunities for exploration and development activities would be forgone in the following areas: 1,800 acres with moderate geothermal potential, 200 acres with moderate potential for magnesium, and 3,700 acres with high potential for high calcium limestone.	Wilderness protection would maintain the area's existing natural appearance, outstanding opportunities for solitude, and special ecological and cultural features.
No Action/No Wilderness (12,811 acres) (Proposed Action)	Opportunities to explore and develop areas with high and moderate mineral potential would be retained.	Mineral exploration and development could degrade naturalness and outstanding opportunities for solitude in the northern, south-central, and southern portions of the WSA in areas of high and moderate mineral potential.



## II. EXISTING RESOURCES

### A. Geology

The Robledo Mountains WSA lies within the Basin and Range physiographic province. This province is characterized by fault block mountains separated by basins filled with alluvial and shallow lake deposits.

The Robledo Mountains are an uplifted fault block within the Rio Grande rift. The mountains are bound on the east and west by northeast trending faults. There are several smaller transverse faults occurring within the Robledo Mountains.

The mountains consist chiefly of Paleozoic sedimentary and Cenozoic igneous rocks. The sedimentary rocks are primarily limestone, dolomite, shale, and siltstone. The igneous rocks include a few basalt cinder cones and plugs in the southern part of the Robledo Mountains and a Tertiary intrusive rhyolite sill in the northern part.

### B. Water

The Robledo Mountains WSA forms part of the boundary between the southern Jornada del Muerto and the Mesilla Valley. Both basins contribute to the larger Rio Grande Basin.

Surface water within the WSA drains into the Rio Grande Basin through an ephemeral stream system. Principal drainages include Faulkner, Indian Springs, and Apache Canyons. Surface flow generally occurs as a result of summer thundershowers.

Ground water moves into the Rio Grande Valley from the uplands to the valley border and then moves down the valley. Ground water is available primarily in the alluvial fill down gradient from the WSA. Significant recharge to the ground water reservoir occurs in Faulkner Canyon during flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

Two major soil types occur within the Robledo Mountains WSA. On mountain tops and steep sideslopes, soils are shallow, stony, and are interspersed between areas of limestone outcroppings. On footslopes and alluvial fans at the base of the mountains, slopes are more gentle. The soils typically are deeper, have a gravelly surface, and a subsurface layer high in calcium carbonates (caliche).

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Robledo Mountains WSA consist of three major types:



## ROBLEDO MOUNTAINS

<u>Vegetation Type</u>	<u>Range Site</u>	<u>Federal Acres</u>
Grass-mixed desert shrub	Mountains	8,925
Creosote	Gravelly	2,688
Mixed desert shrub	Gravelly sand	1,198

Grass species (black grama, tobosa, other gramas, and fluffgrass) exchange dominance with mixed desert shrub species such as creosote, tarbush, ocotillo, mariola, sotol, spicebush, acacia, sumac, yucca, and cacti in the Robledo Mountains. A few scattered juniper trees are also present.

Creosote gravelly areas occur on both sides of the mountain range in the flats. Other shrub species include mariola, tarbush, and mesquite. Fluffgrass is the only common grass species.

Shrub species on gravelly sand in sandy arroyos include brickelbush, desert willow, creosote, mesquite, and tarbush. Associated grass species are fluffgrass and tobosa.

### 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000--5,000 feet. Disappearing rapidly due to over collection.

## E. Wildlife

### 1. General

Nearly half of the Robledo Mountains WSA is a mixed shrub mountain habitat site with a large area of grass. Small portions along the outside edges are creosote foothills and creosote breaks.

There are several special habitat features that enhance the value of the WSA for wildlife. The limestone cliffs are pocketed with caves which are used by many animals. Bats roost in these caves and larger



animals use them for shelter. Golden eagles and other raptors also nest on these cliffs. Whitewash (droppings from raptors) indicate that many birds roost on the cliffs overlooking the river.

The nearness of the Rio Grande is also significant to wildlife in the WSA. Mule deer and other large mammals can water there and move back up the canyons into the WSA. Mule deer numbers in the area are low.

Bird life is fairly varied because there are four different habitat sites within the WSA and a fifth one, riparian (the Rio Grande), close by. Some birds which use the Rio Grande as a migration route may occasionally stop over in the WSA.

## 2. Threatened or Endangered Fauna Species

Some of the birds which may occasionally use the WSA are Federal-endangered species, such as the bald eagle and the peregrine falcon. However, these birds do not depend on the WSA as crucial habitat and are only transitory in the WSA.

A State-listed endangered species which is known from the area is the Trans-Pecos rat snake. Collecting is the main threat this species faces. Its preferred vegetation is rocky areas supporting shrubby vegetation, which is typical of much of the WSA.

### F. Visual

The Robledo Mountains WSA has a Class B scenic quality rating or a moderate rating. The Robledo Mountains reach a maximum elevation of 5,876 feet. Banded blocky outcrops are characteristic of upper elevations with fan and fluvial deposits forming downward sloping rounded hills at lower elevations. The entire landform tilts southward. Landform colors are banded with alternate light and dark reddish browns. Vegetation is sparse and irregular in colors of dark creosote green and lighter gray greens and tans.

Portions of the Robledo Mountains WSA are in two Visual Resource Management (VRM) Classes as follows: Class II-6,533 acres, Class III-6,278 acres.

### G. Cultural

There are 20 known historic and prehistoric sites in and along the boundaries of the Robledo Mountains WSA. The most significant and unique of these sites are small caves and pithouse village sites that are undisturbed. In addition, there is a 10 room pueblo in the WSA. This WSA contains high potential for significant prehistoric resources. The major historic site in the WSA is a heliograph station on top of Lookout Peak, established in the early 1880's to communicate with similar stations about Apache activities. A portion of the station still remains on top of Lookout Peak.



## ROBLEDO MOUNTAINS

### H. Air

Generally, the quality of air within the Robledo Mountains WSA is good. The air quality in the WSA does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



The east side of the Robledo Mountains WSA.



## III. EXISTING AND POTENTIAL USES

## A. Mineral Resources

The mineral resource potential of the WSA is shown on Map 32-2. Locations of lands under mineral leases are shown on Map 32-3.

## MINERAL RESOURCES POTENTIAL OF THE ROBLEDO MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*
Energy Minerals			
Oil and Gas	Paleozoic sediments	Low	--
Geothermal	Tertiary rhyolite sill; Rio Grande rift; proximity to known occurrence	Moderate	1,800
Nonenergy Minerals			
Sand and Gravel	Terraces above Rio Grande Valley	Low	--
Building Stone	Limestone	High	1,300
Magnesium	Ordovician Uphamomite and Silurian Fusselman dolomite	Moderate	200
High-Calcium Limestone	Pennsylvanian limestones	High	3,700
Manganese <sup>a/</sup>	Small, sporadic, low-quality occurrences near WSA	Low	--
Iron	Hematite, goethite in Iron Hill deposits $\frac{1}{2}$ mile southwest of WSA	Low	--

Notes: \*Acreage was not calculated for areas with low potential.

<sup>a/</sup>Listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.

## 1. Energy Minerals

As of December 1, 1984, there were two post-Federal Land Policy and Management Act (FLPMA) geothermal leases in the WSA.

## a. Geothermal

There are no known geothermal occurrences in the Robledo Mountains WSA. The extreme northern portion of the WSA in T. 21 S.,



## ROBLEDO MOUNTAINS

R. 1 W., Sections 15, 20, 21, 22, and 23, lies within the Radium Springs Known Geothermal Resource Area (KGRA). (See Map 32-1 for general location of the KGRA.) Geothermal resources are known to occur at the former Radium Hot Springs resort, about 1 mile northeast of the WSA, where hot water was pumped from a rhyolite sill. This sill is also present in the northern portion of the WSA. Hunt Energy drilled two deep geothermal test wells 2 miles north of the WSA in 1980 and found water temperatures to be about 200°F. The lessee has explored the possibility of building a small electrical generating plant utilizing geothermal energy. Another possibility being investigated is a geothermally-heated agricultural project such as a greenhouse. The presence of the WSA in the Rio Grande rift, the proximity to a known geothermal resource, and the occurrence of other geologic indicators suggests that the WSA has moderate potential for geothermal energy.

### b. Oil and Gas

The nearest oil and gas test well is the Sinclair No. 1 Federal, about 2 miles southwest of the WSA in T. 22 S., R. 1 W., Section 27, NW¼. This well was drilled to a depth of 6,510 feet and was a dry hole. The bottom of the hole is in a rhyolite sill. At the present time, the potential for oil and gas occurrences within the WSA appears to be low due to absence of good petroleum source rocks and other geologic indicators. However, further prospecting and exploration are needed to fully assess this potential.

## 2. Nonenergy Minerals

As of September 17, 1984, there were no mining claims recorded with BLM in the WSA.

### a. Magnesium

Kottlowski (1957) reports that the Robledo Mountains contain a large volume of high-purity dolomite. About 4.5 million tons are reported to occur in the Ordovician Upham dolomite and 18 million tons in the Silurian Fusselman dolomite. Chemical analyses show that the Upham dolomite contains 44.9 percent magnesium carbonate and that the Fusselman dolomite contains 45.5 percent magnesium carbonate. These dolomites are potential sources of magnesium. However, U.S. magnesium reserves are large and domestic production would probably continue to be met by existing producers for a long time. For this reason, the magnesium resource potential is only moderate.

### b. High-Calcium Limestone

Kottlowski (1962) reports the occurrence of high-calcium limestones in the Robledo Mountains. Cliff forming high-calcium limestones of Pennsylvanian age crop out in the north central part of the WSA. However, the outcrops which form near vertical cliffs high above the mountain base are inaccessible and would be very expensive to mine.






# ROBLEDO MOUNTAINS WSA (NM-030-063)

Proposed Action--No Action/No Wilderness Alternative

MAP 32-2





## MINERAL RESOURCE POTENTIAL

-  WSA Boundary
-  BLM
-  State

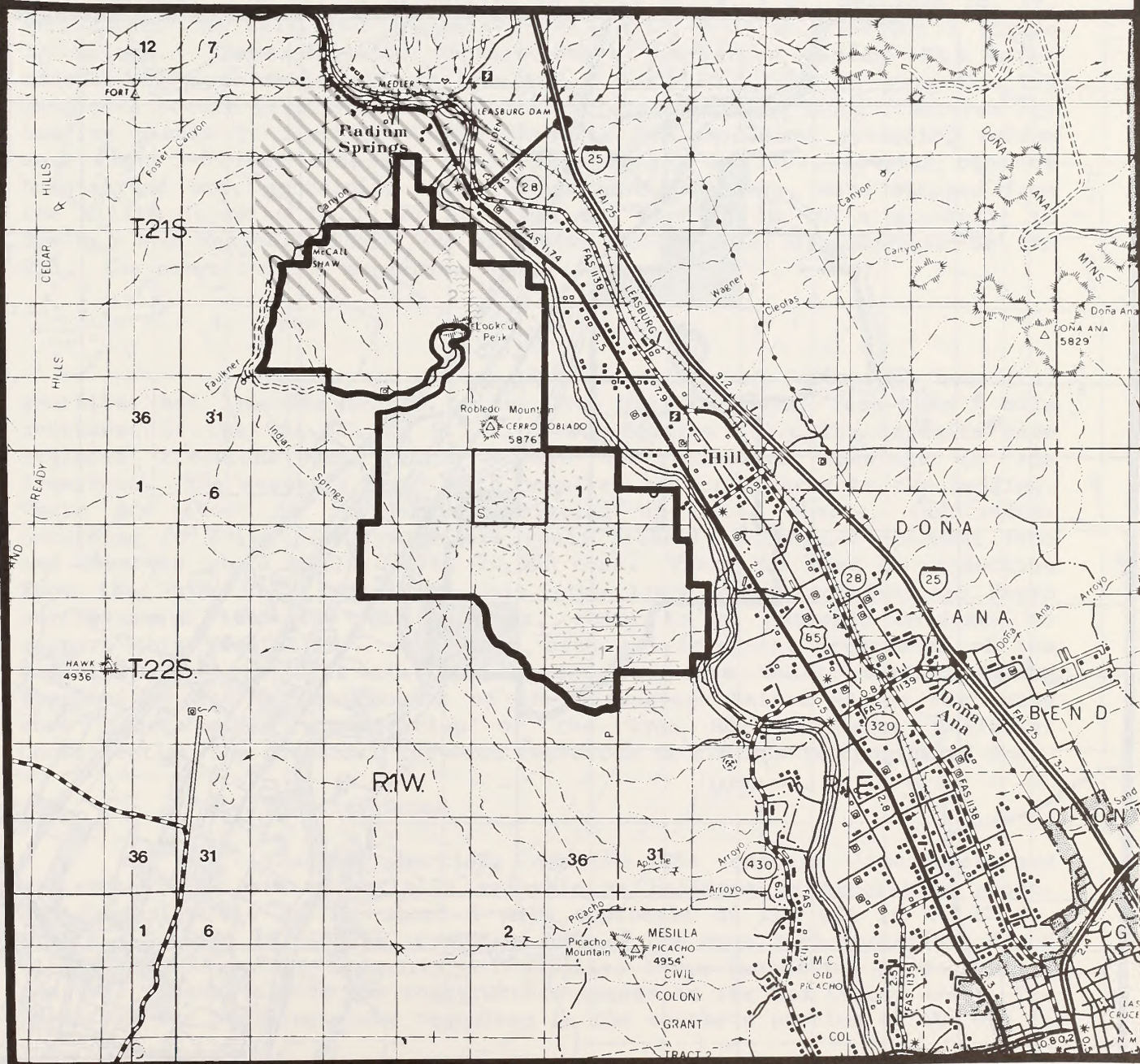
State ownership is identified only inside the WSA boundary.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District, January 1985.

-  High Calcium Limestone
-  Building Stone
-  Magnesium
-  Geothermal

Areas of high (1) and moderate (2) mineral potential are shown for lands within the WSA; the potential may extend outside the WSA boundary. Areas of low potential are not shown.





# ROBLEDO MOUNTAINS WSA (NM-030-063)

Proposed Action--No Action/No Wilderness Alternative

- WSA Boundary
- BLM
- State

MAP 32-3

## MINING CLAIMS AND MINERAL LEASES\*

■ Post-FLPMA Geothermal Leases

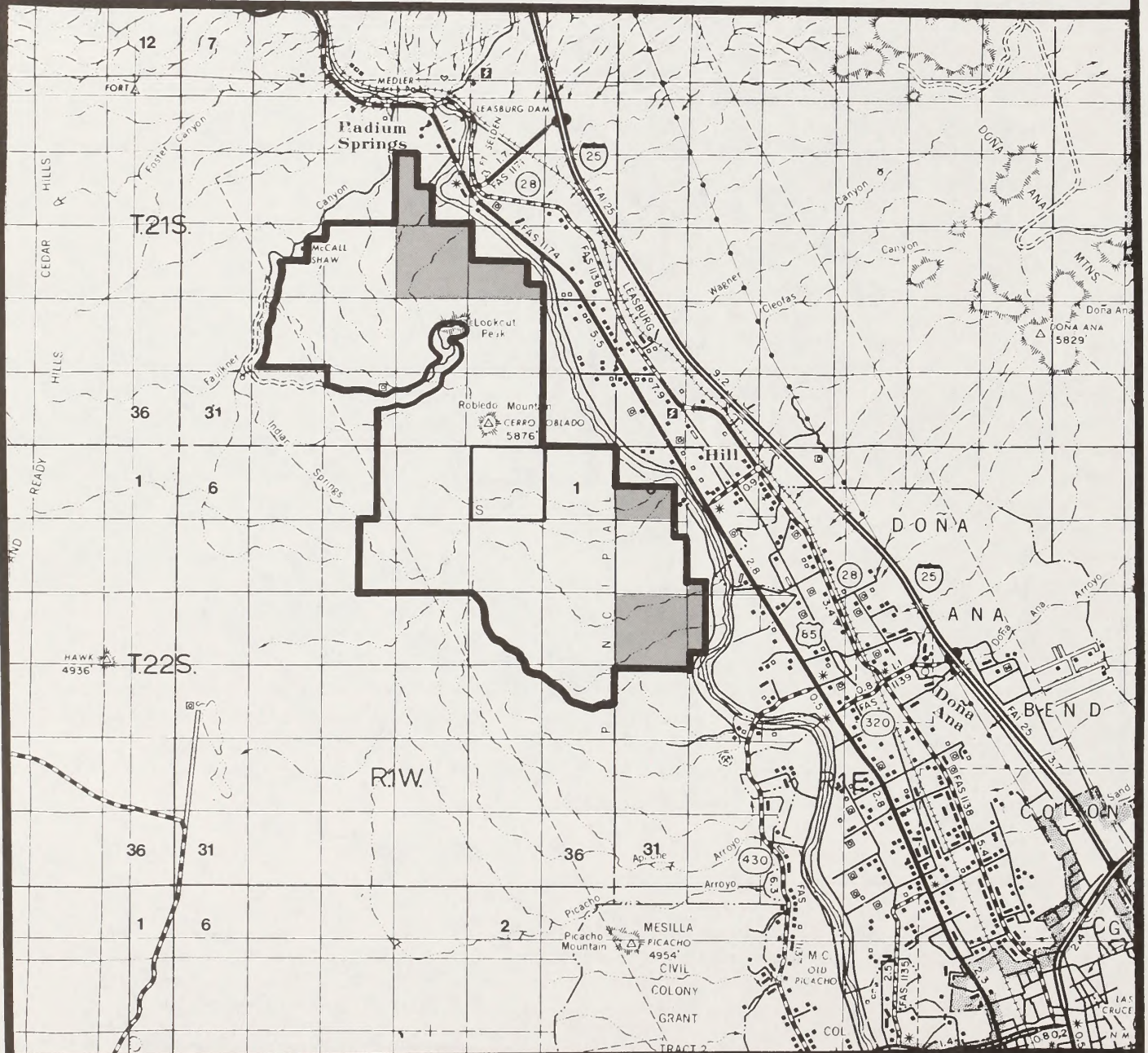
FLPMA was passed October 21, 1976.

\*No mining claims were recorded with the BLM within the WSA as of September 17, 1984.

State ownership is identified only inside the WSA boundary.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District, January 1985.





More accessible high-calcium limestones are present in the Hueco formation in the southeastern portion of the WSA. A channel sample from an outcrop in T. 22 S., R. 1 E., Section 18, NW $\frac{1}{4}$ , showed 97.6 percent calcium carbonate, 0.5 percent magnesium carbonate, and 0.3 percent silica. These high-calcium limestones are an excellent source for Portland cement. Potential for the occurrence of an economic deposit is high. Continued growth in the southwest would result in a continuing need for cement-grade limestone. The high-calcium limestone deposits in the Robledo Mountains could help satisfy this need.

#### c. Manganese

Farnham (1961) described several manganese occurrences near the WSA: the Willis properties in T. 22 S., R. 1 E., Sections 18, 19, and 30 and the Gilliland deposits in T. 22 S., R. 1 W., Section 2 (State inholding). These deposits contain earthy manganese oxides with minor amounts of pyrolusite and psilomelane. Calcite occurs as gangue. The manganese occurs in stringers and small irregular masses along fractures and bedding planes in limestone. The deposits are small and sporadic, seldom more than 3-8 feet wide and 20-30 feet long. In 1943, several tons of hand-sorted ore, containing about 23 percent manganese, were shipped from the Willis deposits in T. 22 S., R. 1 E., Section 30, to a stockpile in Deming, New Mexico. There are no known occurrences of manganese in the WSA. The potential for manganese resources is low.

#### d. Iron

Porous and broken ore consisting of intergrown hematite, goethite, and limonite occurs in the Iron Hill deposits, less than  $\frac{1}{2}$  mile southwest of the WSA (T. 22 S., R. 1 W., Section 16). The deposits have replaced limestone and filled broken and dissolved openings in the limestone. The deposits occur both parallel and transverse to the bedding. There are about 16 prospects consisting of pits, shafts, and adits. According to Kelly (1949), the ore would probably average 50 percent iron and reserves would be 10,000 to 20,000 tons. There has been no production from the Iron Hill deposits. This iron trend could continue at depth northeastward into the WSA; however, there is no geologic evidence to support this possibility. The small size and irregular occurrence of the deposits, and the fact that the demand for iron would continue to be supplied by the large deposits of the midwestern United States for quite some time, makes exploitation of the Iron Hill deposits unlikely. Consequently, the potential for iron resources in the WSA is considered low.

#### e. Building Stone

Southern portions of the WSA contain limestones and siltstones that are potentially valuable as building or decorative stone. BLM Community Pit No. 1, about 1 mile southeast of the WSA in T. 22 S., R. 1 E., Section 19, SE $\frac{1}{4}$ SE $\frac{1}{4}$ , contains some of the same rock formations found within the WSA. This community pit supplies large quantities of rock which are used extensively in the construction trades in the Las Cruces area. The potential for building stone resources in the southern portion of the WSA is



## ROBLEDO MOUNTAINS

high, especially in the vicinity of T. 22 S., R. 1 E., Section 18 and T. 22 S., R. 1 W., Sections 13 and 24.

### f. Sand and Gravel

Sand and gravel resources occur along the eastern edge of the WSA in terraces above the Rio Grande Valley. However, there is no public access to these areas which limits the development potential of these resources. More accessible deposits of sand and gravel are located elsewhere along the Rio Grande Valley. Therefore, the potential for sand and gravel in the WSA is low.

### B. Watershed

Within the Robledo Mountains WSA, water is used primarily by livestock and wildlife. The only water development within the WSA boundary that utilizes surface runoff is a dirt tank (see Livestock Grazing). The Robledo Mountains WSA is within the Lower Rio Grande declared underground water basin and ground water use is administered by the New Mexico State Engineer.

### C. Livestock Grazing

#### 1. Allotments

Parts of four grazing allotments are within the Robledo Mountains WSA. Most of this WSA is ungrazed by livestock due to the steep slopes or the lack of water. Licensed grazing use on public land includes cattle and a few horses. The Corralitos Venture (3013) is under an implemented Allotment Management Plan (AMP). There is a 45-acre tract of unallotted Federal land on the northern end of the WSA near the Rio Grande.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
F. Burke 3008	10,802	1,020	291	3%
Corralitos Venture 3013	130,109	13,860	151	.1%
Cohorn and Johnson 3040	8,968	636	8,438	94%
Indian Springs 3047	14,931	1,700	3,886	26%
Unallotted	45	0	45	
TOTAL			12,811	



## 2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
F. Burke 3008	dirt tank	T. 22 S., R. 1 W., Sec. 24
Cohorn and Johnson 3040	interior fence	1½ miles
Indian Springs 3047	trough <sup>b/</sup> interior fence	T. 21 S., R. 1 W., Sec. 33 ¼ mile

## Boundary Fences:

Indian Springs 3047 and Cohorn-Johnson 3040	4½ miles
Cohorn-Johnson 3040 and Rio Grande	1 mile
Cohorn-Johnson 3040 and unallotted Federal land	½ mile
Cohorn-Johnson 3040 and Corralitos Venture 3013	½ mile
Corralitos Venture 3013 and Indian Springs 3047	½ mile

Notes: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

<sup>b/</sup>Water is hauled to this trough.

## 3. Potential Rangeland Developments

There is no existing allotment boundary fence between the F. Burke (3008) and Cohorn and Johnson (3040) grazing allotments. The Cohorn and Johnson allotment includes most of the public land around Lookout Peak and the Robledo Mountains, as well as most of the southern half of the WSA. The northern part of the Burke allotment includes that part of the WSA in T. 22 S., R. 1 W., Sections 23 and 24. Livestock trespass between the two allotments is currently not a problem. However, a permanent livestock water was recently installed in the northern part of the Burke allotment (outside of the WSA) and existing plans (Rangeland Improvement Justification Plan for Francis Burke allotment--No. 3008 (BLM 1984)) propose construction of an allotment boundary fence in fiscal year 1986. The proposed fence would be generally located on the section line that divides T. 22 S., R. 1 E., Sections 18 and 19; T. 22 S., R. 1 W., Sections 13 and 24; T. 22 S., R. 1 W., Sections 14 and 23; and T. 22 S., R. 1 W., Sections 15 and 22, E½. Approximately 1½ miles of the fence would cross the WSA and an additional 1 mile would lie on the WSA boundary. The primary purpose of the fence is to prevent livestock trespass between the two allotments.

## D. Recreation

Recreation activities in and around the Robledo Mountains WSA are primarily rockhounding and off-road vehicle (ORV) use. The area around the southeastern part of the WSA is well known for its fossils.



## ROBLEDO MOUNTAINS

A lot of ORV use occurs in the area due south of the WSA and on the vehicle trail that forms the southern boundary of the WSA. ORV use occurs on vehicle trails within the WSA, on roads forming the WSA boundaries, and on the cherry-stemmed road to Lookout Peak. Based on the terrain, soil characteristics, and size of the Robledo Mountains, ORV opportunities are considered excellent. The area receives quite a bit of recreational use because of the ORV opportunities and its proximity to Las Cruces.

Primitive recreation opportunities are discussed in Chapter IV, Primitive and Unconfined Recreation.

### E. Realty Actions

The Industrial Communications and Equipment Company and the Western Communications Company share a right-of-way (ROW) for their communication sites on Lookout Peak. The cherry-stemmed access road to the top of Lookout Peak is covered by the shared ROW. The facilities on top of the Peak include a 10 foot by 6 foot building, a round building 6 feet in diameter, and 3 towers ranging from 30 to 50 feet in height.

A small portion of the Robledo Mountains WSA near the Rio Grande is withdrawn by a Presidential Executive Order and reserved for the use of the U.S. Department of State in connection with the Rio Grande Canalization Project. This land withdrawal is scheduled to be reviewed for possible revocation by 1985.

Elephant Butte Irrigation District presently has an application for a ROW on file with the BLM. The application is for a proposed flood control structure on Faulkner Canyon and includes 10 acres of land within the WSA.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

###### a. Naturalness

Imprints of man within the Robledo Mountains WSA are generally unnoticeable. The dirt tank and drinking trough within the WSA are located less than  $\frac{1}{2}$  mile from the boundary. The vehicle trail in T. 22 S., R. 1 W., Sections 3, 10, and 11, is topographically screened from most of the WSA.

The last 2 miles of the cherry-stemmed road to Lookout Peak and the communication site facilities on top of the Peak have a negative impact on the naturalness of the area between Lookout Peak and Robledo Mountain. However, when considered as a whole, the WSA is apparently natural.

###### b. Solitude

The rugged topography of the Robledo Mountains provides outstanding opportunities for solitude, especially in the many drainages in the southeastern and northwestern parts of the WSA.

Vehicle use on the cherry-stemmed road to Lookout Peak negatively impacts opportunities for solitude in the area between Lookout Peak and Robledo Mountain.

###### c. Primitive and Unconfined Recreation

Primitive recreation opportunities in the Robledo Mountains WSA include hiking, backpacking, caving, hunting, and rockhounding.

Hiking and backpacking opportunities are somewhat limited by the size and shape of the WSA. The area is not large enough to accommodate a backpack trip of any length. The State land in T. 22 S., R. 1 W., Section 2, disrupts the topographic integrity of the WSA and limits hiking opportunities.

Geronimo's Cave presents the only known caving opportunity in the WSA. The cave is located just east of Lookout Peak in T. 21 S., R. 1 W., Section 26. The cave entrance is through a crevice and the cave contains a 40 foot pit. The one active speleological group in the Las Cruces area, the Mesilla Valley Grotto, visits the cave occasionally.

During the intensive inventory phase of the wilderness review, opportunities for primitive recreation were judged as not being outstanding in terms of the quality of recreation opportunities available in the WSA.



## ROBLEDO MOUNTAINS

Off-road vehicle (ORV) use and rockhounding opportunities are discussed in Chapter III, Recreation.

### 2. Special Features

The Robledo Mountains WSA contains special ecological and cultural features of scientific and educational interest.

The ecological features include both vegetation and wildlife values. The Robledo Mountains provide habitat for a Bureau sensitive plant species proposed for Federal listing and a plant species of special concern to the New Mexico State Heritage Program. (See Chapter II, Vegetation.) Special wildlife habitat features such as cliffs, caves, and the nearby Rio Grande account for the variety of wildlife found in the WSA. The area also provides habitat for the Trans-Pecos rat snake, a State endangered species. (See Chapter II, Wildlife.)

The Robledo Mountains WSA encompasses 20 known historic and prehistoric cultural sites. The area contains high potential for significant prehistoric resources. (See Chapter II, Cultural.)

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Robledo Mountains WSA as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	8,925
creosote	2,688
Trans-Pecos shrub savanna	1,198

#### b. Distance From Population Centers

The Robledo Mountains WSA is approximately 2 hours driving time from El Paso, Texas; 1 hour from Las Cruces, New Mexico; 3 hours from



Albuquerque, New Mexico; 5 hours from Tucson, Arizona; and 7 hours from Phoenix, Arizona.

## B. Manageability

Several factors potentially affect the capability of the Robledo Mountains WSA to be managed as wilderness: land status patterns, the cherry-stemmed road to Lookout Peak, and the possibility of ORV use.

The 640 acres of State land in T. 22 S., R. 1 W., Section 2, are located in the center of the mountains and disrupt the topographic continuity of the WSA. This limits primitive recreation opportunities because the total Robledo Mountains area is not available to the recreationist. In addition, nonconforming or nonwilderness uses such as geothermal or mineral development on this section would negatively affect wilderness values in the Robledo Mountains. Should the Robledo Mountains WSA be designated wilderness, this section of State land should be considered for acquisition.

The cherry-stemmed road to Lookout Peak impacts the naturalness and solitude of the local area between Lookout Peak and Robledo Mountain. The continued use of vehicles on this road would result in even more significant impacts on solitude.

There is also the possibility that unauthorized ORV use in the canyons off the Lookout Peak road and on the vehicle trail in T. 22 S., R. 1 W., Sections 3, 10, and 11 would pose wilderness management problems. These areas presently receive quite a bit of ORV use. At a minimum, signing and patrol of these areas would be required to deal with ORV use.

The Robledo Mountains WSA could be managed to preserve its existing wilderness values.



## ROBLEDO MOUNTAINS

### V. CONSULTATION AND COORDINATION

#### A. Public Involvement Overview

Personal letters, form letters, and petitions were received on the Robledo Mountains unit during both the public comment period on the New Mexico Wilderness Review Initial Inventory Decision (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). Maps and one detailed report with a list and legal descriptions of developments were included.

In the March 1980 WSA Proposals, the BLM proposed to drop this area. This recommendation was based on the cumulative impacts of vehicle trails and rangeland developments and the effects of the unit's boundary configuration on wilderness characteristics.

The analysis of public comments revealed concern over the BLM's evaluation of the Robledo Mountains' wilderness characteristics. Approximately 75 percent of the personal letters supported WSA designation of part of the unit. Sizes for the proposed WSA varied from 8,500 to 42,000 acres. Other supporting reasons cited the area's outstanding opportunities for solitude and primitive recreation provided by the topographic screening of the Robledo Mountains' many hills and drainages. Many supplemental values were listed, including the unit's proximity to Las Cruces, the outstanding variety of ecotypes found in the unit, and the uncommon plant species and birds observed in the area.

Comments supporting the BLM's recommendation to drop the Robledo Mountains WSA were also received. Most of these comments cited rangeland developments, vehicle trails, and mining activity as negatively impacting the naturalness of the area and detracting from opportunities for solitude or primitive recreation.

A reevaluation of the Robledo Mountains WSA's wilderness characteristics, based on public comments, additional field checks, and inventory information, indicated that part of the unit met the basic wilderness criteria. The area around Lookout Peak and Robledo Mountain was designated a WSA in the November 1980 New Mexico Wilderness Study Area Decisions.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983), a total of 66 public inputs were received on the Robledo Mountains WSA. Fifty-eight of the inputs favored wilderness designation of the area. Of the 58 inputs favoring wilderness designation, 45 were considered to be form letters. Although all of the form letters were not exactly identical, it was obvious that the letters consisted of nearly identical sentences and paragraphs that had merely been rearranged. However, in both the personal letters and form letters, comments favoring wilderness designation fell into 4 major categories: (1) wilderness characteristics; (2) supplemental values; (3) manageability; and (4) resource conflicts.

Comments regarding the Robledo Mountains' wilderness values were generally broad statements such as, "meets the wilderness criteria in BLM's



regulations," and "excellent wilderness characteristics." Supplemental values most often listed as reasons for wilderness designation were Indian sites and "outstanding wildlife habitat, especially for eagles and peregrine falcons."

Manageability comments included expressions of disagreement with the use of manageability conflicts such as unauthorized off-road vehicle use to support a nonwilderness recommendation and general comments that the area is manageable. Numerous comments suggested land exchanges with the State, closure of the cherry-stemmed road to Lookout Peak, or limiting use of the road to the companies with facilities on the Peak to solve manageability problems.

Comments on resource conflicts in the area by those favoring wilderness designation overwhelmingly expressed the idea that geothermal and other mineral resources should be developed elsewhere.

Comments opposing wilderness designation for the Robledo Mountains WSA fell into two categories: (1) indicating agreement with BLM's assessment and recommended action or (2) listing potential mineral resources as the reason for opposing wilderness designation.

#### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to water, soils, vegetation, wildlife, visual, cultural, air, recreation, and realty actions are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



## SUMMARY OF SCOPING

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Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Amended Boundary	There were no potential boundary adjustments identified to resolve resource conflicts or manageability problems.

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Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Saleable Minerals (Building Stone)	Permits to remove mineral materials would not be issued in designated wilderness areas. Although an area of approximately 1,300 acres with high potential for building stone could be affected, the impacts would not be significant because of the availability of similar materials elsewhere.
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.

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Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
No Action/ No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

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Issues Selected for Detailed Analysis

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Issues identified for this WSA are the quality of the area's wilderness values, the potential for managing the area as wilderness, geothermal potential, and locatable mineral potential.

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## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 12,811 acres of public land within the Robledo Mountains WSA would be recommended suitable for wilderness designation. (See Map 32-1 for location of the WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the wilderness values present in the area with significant long-term Congressional protection. The area would be managed to retain its natural appearance, outstanding opportunities for solitude, and special ecological and cultural features. However, several factors could slightly impact the ability of the BLM to manage the Robledo Mountains WSA as wilderness in the long-term. Geothermal activities, mineral development, or other nonwilderness uses could occur on the State or private lands adjacent to the north and east boundaries of the WSA. Such activities could degrade natural values and opportunities for solitude. The impacts would be minimal to major depending on the type and extent of the activity and access requirements.

Vehicle use on the cherry-stemmed road to Lookout Peak would periodically disrupt the solitude in the area between Lookout Peak and Robledo Mountain.

Unauthorized ORV use in the canyons off the Lookout Peak road and on the vehicle trail through the southwestern part of the WSA would also periodically disrupt solitude and could, in the long-term, degrade natural values.

#### 2. Impacts to Minerals

There is currently no mineral production in the Robledo Mountains WSA. However, approximately 1,800 acres within the WSA have moderate potential for geothermal energy and the WSA lies partially within a Known Geothermal Resource Area (KGRA). All or part of two post-Federal Land Policy and Management Act (FLPMA) geothermal leases lie within the WSA boundary. The post-FLPMA geothermal leaseholders could be impacted in the short-term (the life of the lease) since any exploration or development work that would impair wilderness values would not be allowed.

After wilderness designation, the existing geothermal leases, if unexplored, would not be reissued. No new leases, either geothermal or oil and gas, would be let after wilderness designation. Future options to explore for and develop geothermal resources in the WSA would be forgone. Geothermal resources could be impacted in the long-term.



## ROBLEDO MOUNTAINS

Although there are currently no existing mining claims, portions of the Robledo Mountains WSA have high potential for high-calcium limestone (3,700 acres) and moderate potential for magnesium (200 acres).

It is assumed that after wilderness designation, the location of new mining claims would not be allowed. However, development work, extraction, and patenting of mining claims existing in the Robledo Mountains WSA as of the date of designation would be allowed if the claims are determined to be valid. A mineral examination and subsequent mineral report must confirm that as of the date of designation, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a reasonable prospect of success in developing a valuable mine. Undue and unnecessary degradation of wilderness character would not be allowed, and the use of mechanical and motorized equipment would be authorized only if there are no reasonable alternatives. A Plan of Operations for mining on valid existing claims would include reclamation measures to provide for restoration as near as practicable of the surface of the land disturbed.

Although existing valid claims could be explored and developed after wilderness designation, the mining companies could incur additional costs of operation depending on restrictions on acceptable mining methods and the type and location of acceptable access. Since additional exploration for locatable minerals outside of existing claim boundaries would also be prohibited, the minerals industry would be affected in the long-term since the full potential of the area could not be assessed.

### 3. Impacts to Livestock Grazing

Generally, motorized access on the existing 2 miles of vehicle trail within the designated wilderness would not be permitted. However, if there were no practical alternatives, permits could be issued to allow the affected permittee to haul water to the trough just inside the boundary of the area when livestock are on this part of the Indian Springs allotment (3047) or to allow maintenance of the dirt tank on the Burke allotment (3008).

The allotment boundary fence proposed in the Range Improvement Justification Plan (BLM 1984) for the Burke allotment (3008) could be constructed if it were determined through site-specific analysis to be necessary for the purpose of rangeland or wilderness protection. Road construction and motorized access along the fence would not be authorized.

The cumulative impacts to livestock operators would be insignificant and would consist primarily of minor inconveniences due to restricted vehicular access.

#### B. No Action/No Wilderness (Proposed Action)

Under the No Action/No Wilderness Alternative, the entire 12,811 acres of public land within the Robledo Mountains WSA would be recommended unsuitable for wilderness designation.



If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

Geothermal exploration drilling, prospecting and mining of locatable minerals, and extraction of saleable mineral materials could occur under this alternative. The impacts could be minimal to major depending on which activities occur and the degree of development.

The impacts of geothermal exploration would vary depending on the number of temperature gradient holes drilled and location and type of access.

Locatable mining activities would be regulated to prevent unnecessary and undue degradation. Measures would be required to control erosion and water runoff, and reshaping and revegetation of disturbed areas would be undertaken where reasonably practical. Mineral materials pits could also be reshaped and reseeded.

Predictions as to which of the above activities or combination of activities might occur or analyses of specific impacts are beyond the scope of this report. Therefore, only potential impacts of a general nature are identified.

#### 1. Impacts to Wilderness Values

The natural appearance, outstanding opportunities for solitude, and special features of the Robledo Mountains WSA would not be provided with long-term Congressional protection. Management of the area as specified in land use plans would be subject to administrative change in the long-term.

The development of the Elephant Butte Irrigation District's ROW for a flood control structure would impact the wilderness values in the northern part of the area. However, due to the rugged topography of the Robledo Mountains WSA, this development would not affect the overall apparent naturalness of the area or opportunities for solitude.

Geothermal exploration, the extraction of building stone, or mining operations for locatable minerals accompanied by the construction of new access in the Robledo Mountains WSA could result in the degradation of naturalness and opportunities for solitude as well as the partitioning of the WSA into roadless areas of less than 5,000 acres.

There would probably not be significant impacts in the short-term on the overall naturalness of the area or on opportunities for solitude. However, in the long-term, the impacts could be significant depending on the type, location, and extent of the activities and access requirements.

#### 2. Impacts to Minerals

There would be no impacts to leasable, locatable, or saleable minerals under this alternative. Mineral exploration and development would be regulated to prevent unnecessary and undue degradation.



## WEST POTRILLO MOUNTAINS AND MOUNT RILEY

Over 48 of the West Potrillo Mountains volcanic cones are concentrated in a north-south orientation through the center of the WSA. The cones range from 1,000 feet to 3,000 feet in diameter and elevations at the highest peaks reach 5,400 feet.

Mount Riley and Mount Cox are two of the three high, steep intrusive peaks clustered together east of the West Potrillo Mountains. The highest peak reaches an elevation of nearly 6,000 feet. Prominent talus slopes and alluvial fans surround the base of the peaks.

Indian Basin, a large depression in the southwest part of the West Potrillo Mountains WSA, is rimmed with sand dunes. The Basin's bottom elevation of 4,029 feet is about 75 feet below the surrounding desert floor.

### C. Land Status

The West Potrillo Mountains and Mount Riley WSAs contain 148,345 acres and 6,760 acres of public land, respectively. There is a total of 155,105 acres in both WSAs. The West Potrillo Mountains WSA is the largest BLM WSA in New Mexico.

There are no private or State owned surface inholdings in the Mount Riley WSA. A subsurface mineral estate inholding of 640 acres in the Mount Riley WSA is in private ownership.

There are 12,051 acres of State land within the boundary of the West Potrillo Mountains WSA. (See Map 33/34-1 for land status.)

### D. Access

The West Potrillo Mountains and Mount Riley WSAs are legally accessible from County Roads A03, A05, and A07. County Road A03 forms the southern boundary of the West Potrillo Mountains WSA. This road is known as the Columbus-to-Anapra road and parallels the New Mexico-Mexico border.

County Road A05 branches north from A03 to form the southeast boundary of the West Potrillo Mountains and the west boundary of Mount Riley. At the southern tip of the Mount Riley WSA, County Road A07 branches northeast from A05 to form the east boundary of Mount Riley.

A ranch road continuing north-northeast from County Road A07 ties into a network of roads forming the north and west boundaries of the West Potrillo Mountains WSA.



# WEST POTRILLO MTNS. AND MTN. RILEY WSAs (NM-030-052)

- WSA Boundary
- BLM
- Private
- State
- Amandad Boundary (Proposed Action)
- Chaparral Cinder Claims

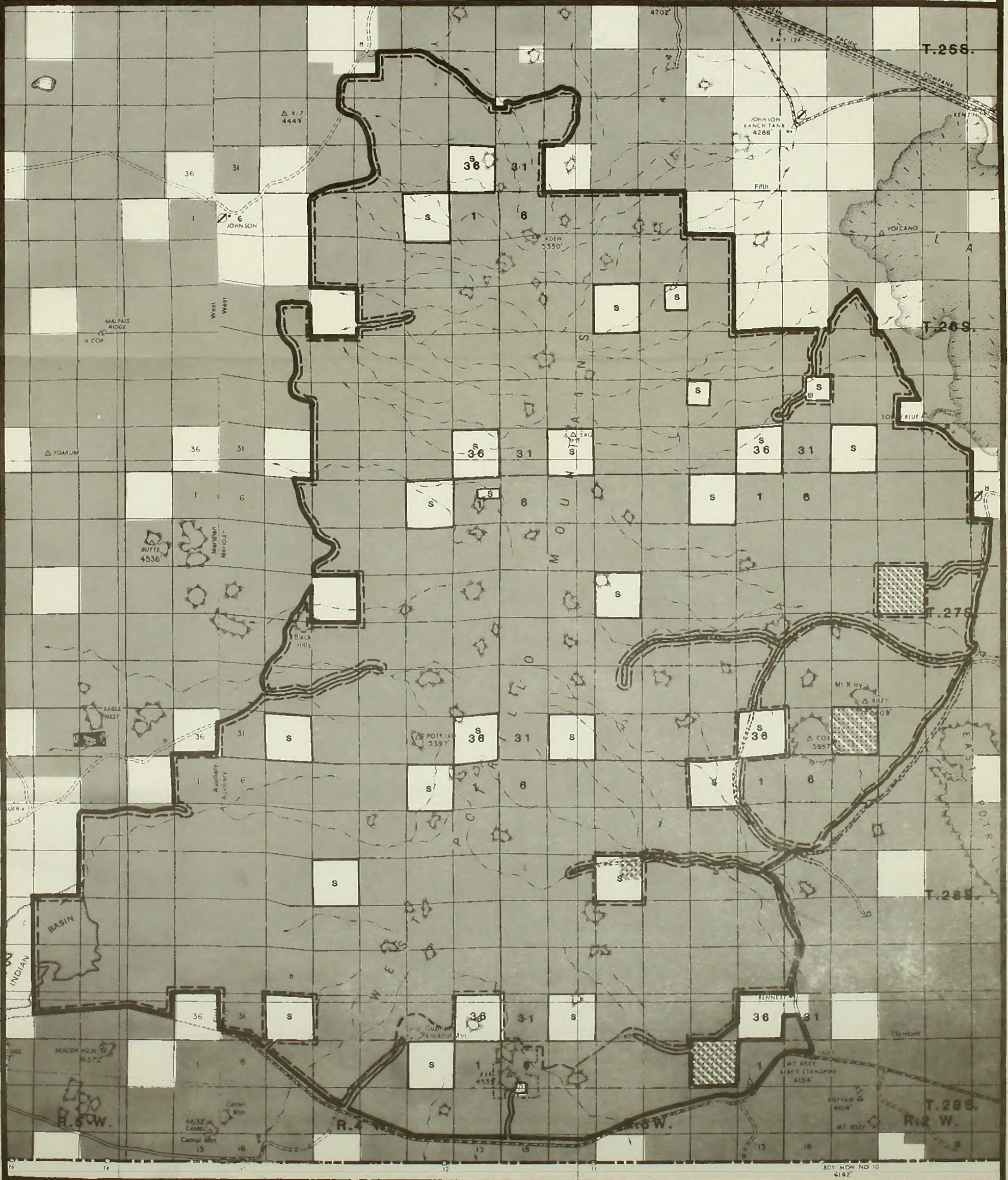
MAP 33/34-1

LAND STATUS

- BLM Surface/Non BLM Subsurface
- Lands removed from WSA status after reinventory

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District, 1985









## E. Proposed Action, Alternatives, and Issues

### DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	Amended Boundary (Proposed Action)	No Action/No Wilderness
<p>°Manage 155,105 acres as wilderness.</p> <p>-Attempts would be made to acquire 15,600 acres of State land, 40 acres of private land, and 2,080 acres of non-Federal subsurface within and adjacent to the WSA.</p> <p>-Close 72 miles of vehicle trails.</p> <p>-Require permits for vehicular access to maintain 8 dirt tanks and 10 3/4 miles of fence.</p> <p>-155,105 acres would be closed to future energy minerals leasing, mining claim location, and mineral materials sales of cinders. This would affect 8,000 acres with moderate potential for oil and gas and 1,400 acres with high potential and 7,400 acres with moderate potential for cinders.</p> <p>-Cinder mining would continue on the Chaparral mining claims in the south-central part of the West Potrillo Mountains WSA if they are valid.</p> <p>-Current levels of authorized grazing use would be maintained.</p>	<p>°Manage 147,100 acres as wilderness.</p> <p>-Attempts would be made to acquire 14,280 acres of State land and 1,440 acres of non-Federal subsurface (mineral) estate.</p> <p>-Close 65 1/2 miles of vehicle trails.</p> <p>-Require permits for vehicular access to maintain 8 dirt tanks and 9 3/4 miles of fence.</p> <p>-147,100 acres would be closed to future energy minerals leasing, mining claim location, and mineral materials sales of cinders. This would affect 8,000 acres with moderate potential for oil and gas and 7,400 acres with moderate potential for cinders.</p> <p>-Current levels of authorized grazing use would be maintained.</p> <p>°Manage 8,005 acres without wilderness protection.</p> <p>-No special attempts would be made to acquire State and private lands.</p> <p>-Vehicle use on existing roads and trails would be allowed to continue.</p> <p>-2,580 acres would be open to energy minerals leasing with a special stipulation to protect primitive values.</p> <p>-5,425 acres would be open to energy minerals leasing with no special stipulations.</p> <p>-Cinder mining would continue on the Chaparral mining claims.</p> <p>-Mineral material sales of cinders could be permitted.</p> <p>-Current levels of authorized grazing use would be maintained.</p>	<p>°Manage 155,105 acres without wilderness protection.</p> <p>-No special attempts would be made to acquire State land and non-Federal subsurface (mineral) estate.</p> <p>-Vehicle use on existing roads and trails would be allowed to continue.</p> <p>-80,600 acres in the central part of the WSA would be open to energy minerals leasing with a special stipulation to protect primitive values.</p> <p>-74,505 acres would be open to energy minerals leasing with no special stipulations.</p> <p>-Oil and gas exploration could occur.</p> <p>-Cinder mining would continue on the Chaparral mining claims.</p> <p>-Mineral material sales of cinders could be permitted.</p> <p>-An area of 23,040 acres could be opened for vegetative collection and sales.</p> <p>-Current levels of authorized grazing use would be maintained.</p>



SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues Wilderness Values
All Wilderness (155,105 acres)	Wilderness protection would generally maintain the West Potrillo Mountains WSA's existing natural values, outstanding opportunities for solitude, outstanding opportunities for hiking, backpacking, hunting, and geological sightseeing, and special ecological and cultural features. However, wilderness values would be destroyed in the area of the Chaparral cinder claims as a result of mining activities. Wilderness protection would maintain the natural appearance, outstanding opportunities for solitude, and special ecological features of the Mount Riley area.
Amended Boundary (147,100 acres recommended suitable, 8,005 acres recommended unsuitable) (Proposed Action)	Wilderness protection would maintain the designated areas' high quality wilderness values.
No Action/No Wilderness (155,105 acres)	Naturalness and opportunities for solitude and primitive recreation would be destroyed in the area of the Chaparral mining claims as a result of cinder mining or in areas where mineral material sales of cinders are permitted in the West Potrillo Mountains WSA. Oil and gas exploration activities could temporarily degrade natural values in the southwestern part of the West Potrillo Mountains WSA. Wilderness values would probably be substantially maintained in the Mount Riley area in the short-term.



## II. EXISTING RESOURCES

### A. Geology

The West Potrillo Mountains and Mount Riley WSAs are located on the La Mesa geomorphic surface along the western margin of the Rio Grande rift zone. Structurally, the West Potrillo Mountains and Mount Riley area is an uplifted block or horst, the northern portion of which is cut by northwest-trending, post-Tertiary faults.

The oldest rock type exposed in the Mount Riley WSA is fine-grained limestone of Cretaceous age. Small outcrops of this limestone are found along the south, east, and northeast borders of Mount Riley and Mount Cox (T. 27 S., R. 2 W., Sections 20 and 32, and T. 28 S., R. 2 W., Section 6). The pluton that forms Mount Riley and Mount Cox varies from altered andesite to rhyodacite of Tertiary age. Volcanic tuffs and sediments of probable Tertiary age crop out on the northwest flank of Mount Riley (Hoffer 1976).

The West Potrillo Mountains are a broad topographic high containing numerous volcanoes and covered by Quaternary olivine basalt. Cinder cones are the most common type of volcano. Over 150 of these have been identified in the range, primarily along the north-south center line of the WSA. Two volcanic maars, or explosion craters, also occur in the West Potrillo Mountains WSA. The basalt flows covering the surface are fairly thin (10-18 feet), but the thickness of the total pile is not known (Hoffer 1981). Based upon drill data from nearby oil and gas wildcat wells, these volcanics appear to have been deposited on top of Tertiary bolson deposits and marine sediments of Cretaceous and Paleozoic age.

### B. Water

The West Potrillo Mountains and Mount Riley WSAs form a divide for the south-central portion of two surface water drainage basins. To the west is the Mimbres Basin, a noncontributing, closed basin and to the east is the Mesilla Basin which contributes to the larger Rio Grande Basin.

Surface water within the WSAs drains into both river basins through ephemeral stream systems. Generally, these ephemeral streams flatten out below the alluvial fan slopes and become a nonintegrated system of washes and arroyos in the valley floor. Surface flow usually occurs as a result of summer thundershowers.

Significant recharge to the ground water reservoir occurs in the many washes and arroyos during flood runoff. Ground water quality is within recommended limits for livestock and wildlife use, as established by the National Academy of Sciences (BLM 1980).

### C. Soils

The West Potrillo Mountains and Mount Riley WSAs are characterized by numerous cinder cones, lava flows, and basalt ridges. Four major landforms and soil types occur within the WSAs.



## WEST POTRILLO MOUNTAINS AND MOUNT RILEY

On the large peaks and steep slopes of the Mount Riley WSA, soils are stony, shallow, and interspersed between areas of rock outcropping. On more level areas around footslopes of the hills and mountains, soils typically are gravelly on the surface with sandy textures. These soils are shallow to moderately deep and are usually underlain by caliche or lime coated basalt. In the southern and western parts of the WSAs, the soils are a deep, sandy texture, and have been reworked by wind. Coppice dunes around shrubs are common in these areas. Numerous depressional areas are found throughout the WSAs. These areas receive runoff water and are characterized by deep, fine textured soils.

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the West Potrillo Mountains and Mount Riley WSAs consist of five major types:

<u>Vegetation Types</u>	<u>Range Sites</u>	<u>Federal Acres</u>
Creosote	Malpais (lava flow)	52,539
Creosote-mixed desert shrub	Gravelly and shallow sands	46,391
Creosote-mixed desert shrub-grass	Hills	14,781
Mesquite	Sandy	36,165
Mixed desert shrub-tobosa	Draws (swales) and bottomland	5,229

Creosote is the dominant vegetation on the malpais (lava flow) areas located in the northeast half of the West Potrillo Mountains WSA. There is a wide diversity of shrubs, annual and perennial forbs, and grasses in the malpais, many occurring in isolated pockets. Other associated shrub species include snakeweed, various cacti, tarbush, mesquite, mariola, spicebush, and zinnia. Grass species include bush muhly, black grama, dropseeds, other gramas, and tobosa.

Creosote, snakeweed, zinnia, mesquite, yucca, various cacti, Mormon tea, tarbush, and mariola are the dominant shrub species in the shallow soil areas (gravels and sands). Many other shrub species are present in small quantities. Grass species include tobosa, black grama, bush muhly, and dropseeds. Pepperweed, a perennial forb, occurs as a dominant species in some areas. Many other annual and perennial forbs are present in varying amounts. These sites are intermixed across both WSAs.

The West Potrillo Mountains, in the center of the WSA, are creosote-mixed desert shrub aspect dominated hills. Other desert shrubs include snakeweed, mariola, fourwing saltbush, various cacti, and a few juniper trees. Grasses are varied and sparse.



Grass is the dominant vegetation on Mount Riley. Grasses in this area include bush muhly, black grama, tobosa, dropseeds, Hall's panic, and annual grasses. Mixed desert shrubs occur on the side slopes.

Mesquite sandy areas in the WSAs are along the southern boundary near the Mexican border and the east side. Associated shrub species are snakeweed, fourwing saltbush, yucca, broom dalea, Mormon tea, acacia, creosote, and pale wolfberry. Bush muhly is the major grass species with many other grasses occurring in small amounts. Many species of annual and perennial forbs inhabit these areas.

Mesquite, tarbush, snakeweed, and creosote are the dominant species in the deep soils of the draws (swales) and bottomland areas. Tobosa grass dominates in a few swales. Many other shrubs and grasses occur in small amounts.

## 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSAs (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus

Status: Bureau sensitive species proposed for Federal listing.

Habitat: Widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Ferocactus wislizenii - southwestern barrel cactus

Status: Selected by New Mexico State Heritage Program as a special concern element.

Habitat: Widespread; rocky, sandy, or gravelly soils or areas in desert grasslands or canyons; 3,000-5,000 feet. Disappearing rapidly due to over collection.

## E. Wildlife

### 1. General

Although the West Potrillo Mountains and Mount Riley WSAs are primarily a low-elevation area, they have eight different habitat sites. Creosote and mesquite sand dunes are the two largest. While neither of these are very valuable wildlife habitats, the combination of all the habitat sites and the size of the WSAs create enough diversity that there are a number of different wildlife species. The total area is significant for wildlife.

One significant feature of the area is Indian Basin, a natural depression at the southwest end of the West Potrillo Mountains WSA. During the rainy season, the basin floods and many ducks can be found on the temporary pond. There are a number of other dirt tanks in the WSA; waterfowl can be expected on any of them when they hold water.



WEST POTRILLO MOUNTAINS AND MOUNT RILEY



Looking north into the West Potrillo Mountains WSA.



Mount Riley WSA.  
33/34-8



Wintering raptors are found in high numbers in the WSAs. This may be attributed to the high mammal prey base in creosote and mesquite sites (BLM 1981).

Some raptors also nest within the WSAs. Burrowing owls are fairly common in the mesquite sand dune sites. Golden eagles and great horned owls nest in the cinder cones of the West Potrillo Mountains. Swainson's hawks nest in soaptree yuccas, a common plant species in some parts of the WSAs (BLM 1979).

Mule deer are found in low numbers within the WSAs. The New Mexico Department of Game and Fish has designated the West Potrillo Mountains as a herd unit area. They estimate that there are now less than half a deer per section, and the optimum number of deer for the area is half a deer per section.

## 2. Threatened or Endangered Fauna Species

There are several records of peregrine falcons, a Federal endangered species, being seen in or near the West Potrillo Mountains WSA in the winter, but there is no reason to think they depend on the WSA as crucial habitat. The Swainson's hawk, which probably nests in the area, is presently under review by the U.S. Fish and Wildlife Service for listing as a threatened or endangered species. A rare mollusc, Ashmunella rileyensis, is endemic to several localities in these WSAs and is listed as an element of special concern by the New Mexico State Heritage Program.

### F. Visual

Four scenic quality rating units (SQRUs) describe the West Potrillo Mountains and Mount Riley WSAs. The Mount Riley, West Potrillo Mountains, and Indian Basin SQRUs described below all have Class B (moderate) ratings.

Mount Riley is only one of three massive dome-like landforms within this rating unit that abruptly rise above the desert floor. Colors are dull brown and dark gray with some reddish tones. The dark green and light brown vegetation is scattered and random with some concentrations in the radial drainage ways.

The West Potrillo Mountains SQRU consists of a chain of moderately steep cone shaped and horseshoe shaped (herraduras) volcanic landforms. Landform color is principally dark brown to black with some reddish tones. The vegetation on the lower slopes appears marbled with areas of light and dark green while upper slopes appear more uniformly dark green.

The Indian Basin SQRU describes the southwest part of the West Potrillo Mountains WSA. The sand dunes forming the rim of the Basin are primarily light tan mottled with dark green and gray-green vegetation. From a distance, the basin depression appears uniformly covered with grasses which vary in color from bright greenish yellow to light green, depending on the season.



## WEST POTRILLO MOUNTAINS AND MOUNT RILEY

The fourth SQRU describing the WSAs surrounds the three SQRUs described above. This rating unit consists of flat to gently rolling desert with a Class C rating. The green, tan, and gray colors of creosote, mesquite, yucca, and grasses offer some contrast with the light browns, tans, and orange-browns of the flats and rolling sand dunes.

The West Potrillo Mountains and Mount Riley WSAs fall into a Visual Resource Management (VRM) Class IV.

### G. Cultural

There are four known sites in the West Potrillo Mountains and Mount Riley WSAs. One site is a Classic Mimbres pueblo that has been bulldozed; however, some undisturbed material may still remain. This site has the highest concentration of bird bones of any known Mimbres site. There are several undisturbed El Paso phase structures near the middle of the West Potrillo Mountains WSA and one El Paso phase hamlet near the southeast boundary of the WSA. The most concentrated and significant cultural resources are in the southwestern portion of the WSAs. They provide information regarding settlement in a very marginal area.

### H. Air

Generally, the quality of air within the West Potrillo Mountains and Mount Riley WSAs is good. The air quality in the WSAs does not exceed the State or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the State.



## III. EXISTING AND POTENTIAL USES

## A. Mineral Resources

The mineral resources potential of the West Potrillo Mountains and Mount Riley WSAs is shown on Map 33/34-2. Map 33/34-3 shows the approximate location of mining claims and mineral leases within the two WSAs.

MINERAL RESOURCES POTENTIAL OF THE WEST POTRILLO MOUNTAINS  
AND MOUNT RILEY WSAs

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*	Approximate Acreage in Amended Boundary*
Energy Minerals				
Oil and Gas	Quaternary basalt flows; probable Cretaceous and Paleozoic sediments at depth	Moderate	8,000	8,000
	Quaternary basalt flows with numerous cinder cones; probable Cretaceous and Paleozoic sediments at depth	Low	--	--
Geothermal	Recent volcanism; Rio Grande rift zone	Low	--	--
Nonenergy Minerals				
Base and Precious Metals (Copper <sup>a</sup> / <sub>a</sub> , Gold, Silver <sup>a</sup> / <sub>a</sub> , Lead <sup>a</sup> / <sub>a</sub> , Zinc <sup>a</sup> / <sub>a</sub> , Molybdenum <sup>a</sup> / <sub>a</sub> )	Tertiary intrusive and volcanics; Cretaceous limestone	Low	--	--
Cinders	Potrillo basalt field; numerous cinder cones	High	1,400	-0-
		Moderate	7,400	7,400
		Low	--	--

Note: \*Acreage was not calculated for areas with low potential.

<sup>a</sup>/Listed on the National Defense Stockpile Inventory of Strategic and Critical Minerals.



## 1. Energy Minerals

There are 37 oil and gas leases within the two WSAs. All of these leases became effective after the enactment of the Federal Land Policy and Management Act (FLPMA) on October 21, 1976, and are referred to as post-FLPMA leases. The West Potrillo Mountains Primitive Area, an 80,600-acre area in the central part of the West Potrillo Mountains WSA and south half of the Mount Riley WSA, is covered by a lease stipulation to protect primitive values (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983).

### a. Oil and Gas

Geophysical exploration for oil and gas resources has occurred sporadically adjacent to and within the WSA, and two wildcat oil and gas wells were drilled in or near the southwestern part of the WSA. The Sunray Midcontinent No. 1 Federal "R" (T. 28 S., R. 5 W., Section 27) was drilled in Indian Basin within the WSA to a total depth of 6,626 feet. Gas was reported within the El Paso formation in the interval from 5,582 to 5,619 feet. Another well, the Skelly No. 1-A N.M. "C", was drilled about 1½ miles west of the WSA (T. 28 S., R. 5 W., Section 19). This well was drilled to 9,437 feet with the last 637 feet in Precambrian basement rock (Thompson et al. 1978), and had no reported shows. Although information from these wells is not conclusive, the oil and gas potential in the southwestern portion of the West Potrillo Mountains WSA is considered to be moderate based upon the show of gas in the Sunray Midcontinent No. 1 Federal "R". Some geophysical exploration has been done along the eastern boundary of the West Potrillo Mountains WSA to the north and southwest of the Mount Riley WSA, but there is no other favorable information in this area to justify a moderate classification for oil and gas resources. These areas, as well as the remainder of the West Potrillo Mountains WSA and the entire Mount Riley WSA have low to no potential for oil and gas, primarily because high temperatures associated with the numerous cinder cones in the West Potrillo Mountains and the Mount Riley intrusion would have had a detrimental effect on any previously existing oil and gas accumulations.

### b. Geothermal

Based upon geothermal exploration by Hunt Energy Corporation in the late 1970's and early 1980's, the potential for geothermal resources in the West Potrillo Mountains and Mount Riley WSAs is low to none. No anomalous temperature gradient or heat-flow data have been obtained from the area, and current information indicates that the area may be a recharge zone.

## 2. Nonenergy Minerals

According to BLM records dated September 17, 1984, there are 103 mining claims within the two WSAs. Of these, 22 were located before the enactment of FLPMA and are referred to as pre-FLPMA claims.



MAP 33/34-2

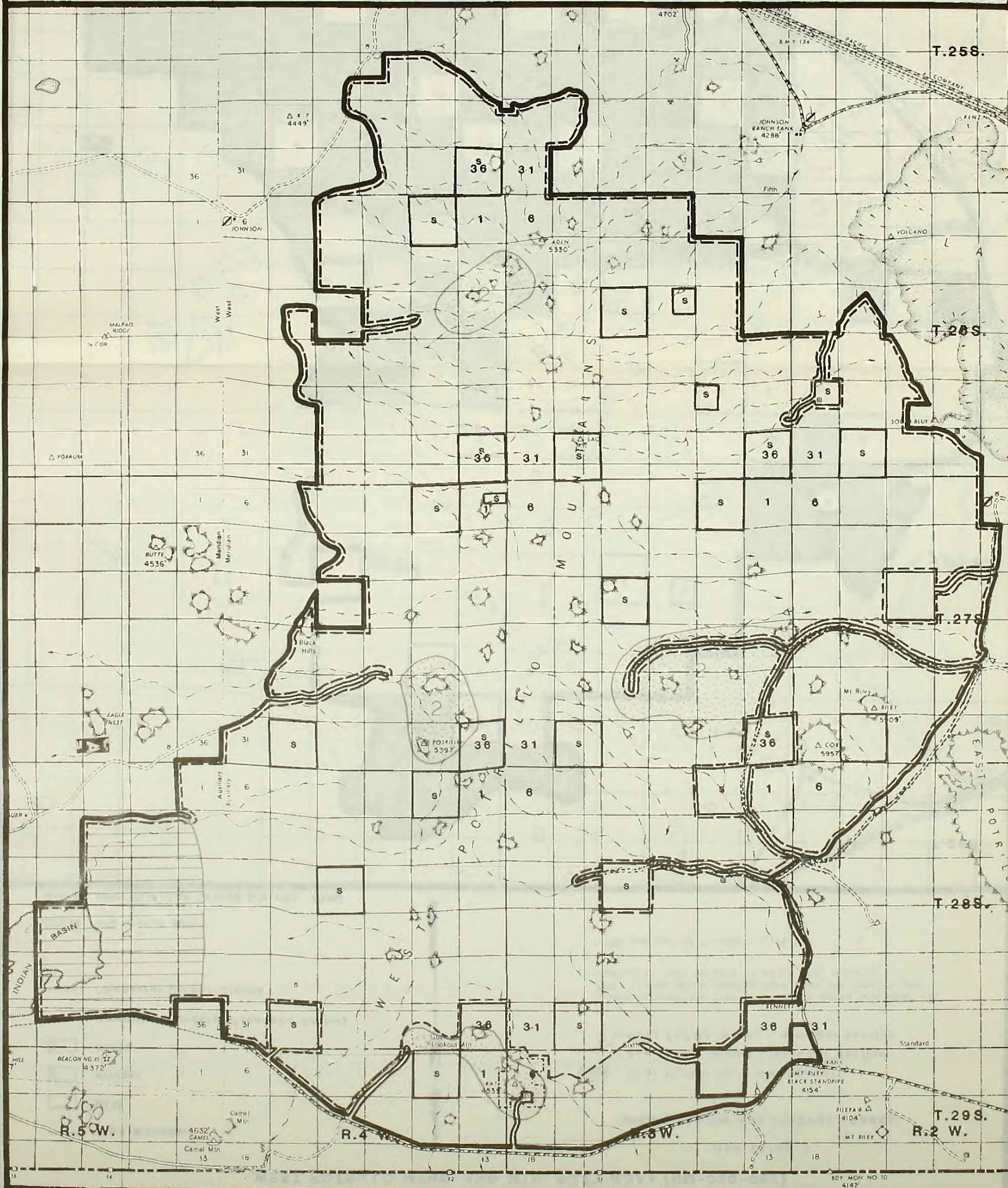
MINERAL RESOURCE POTENTIAL\*

- ☐ Cinders
- ☐ Oil & Gas

\*Areas of high (1) and moderate (2) mineral potential are shown for lands within the WSA; the potential may extend outside the WSA boundary. Areas of low potential are not shown.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Los Cruces District, 1985





# WEST POTRILLO MTNS. AND MTN. RILEY WSAs (NM-030-052)

MAP 33/34-3

## MINING CLAIMS AND MINERAL LEASES

- WSA Boundary
- BLM
- Private
- State
- - - Amended Boundary (Proposed Action)
- · · · · Chaparral Cinder Claims

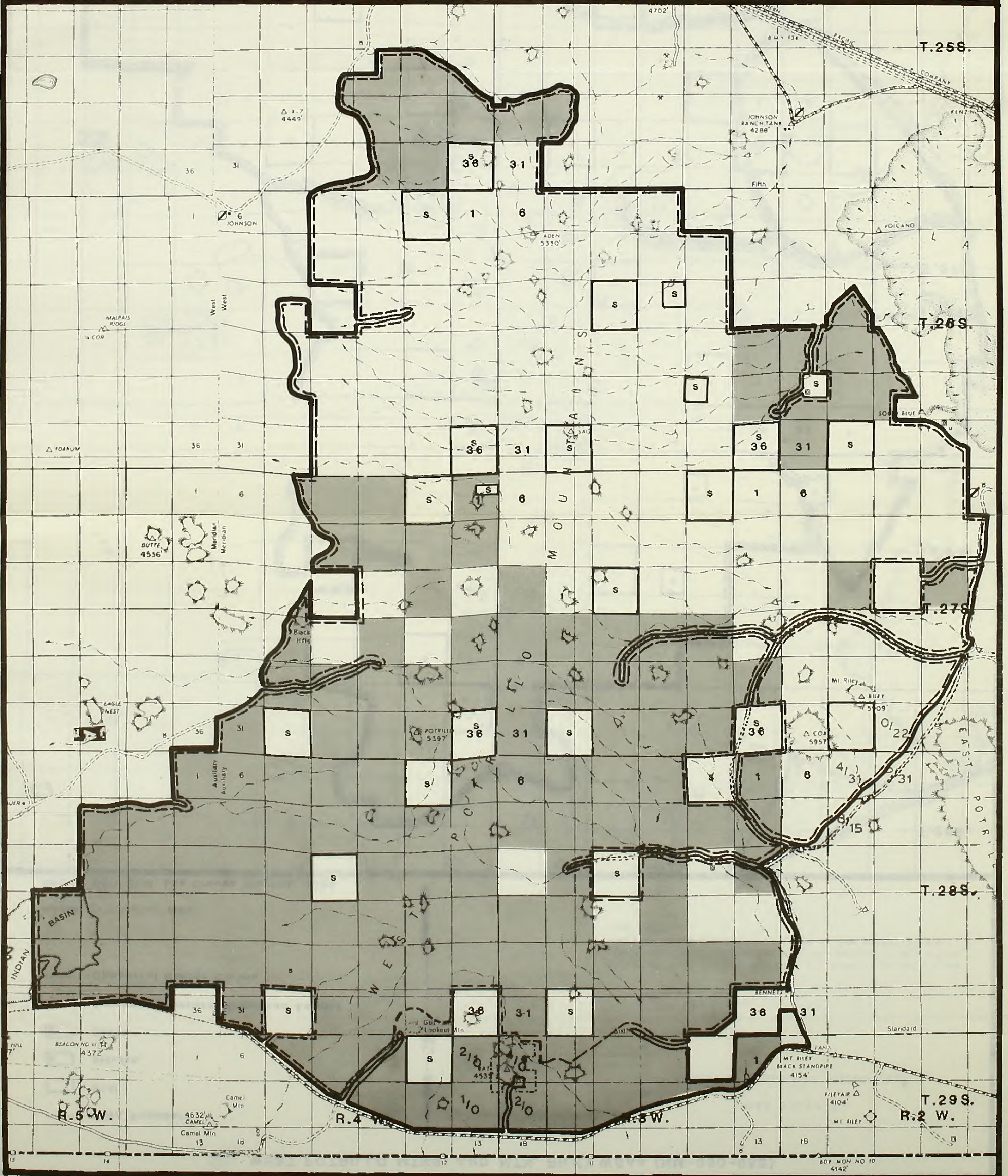
- Post FLPMA Oil & Gas Lease
- ⎓ Pre FLPMA Mining Claims per section
- ⎓ Post FLPMA Mining Claims per section

(Claim information from BLM records dated September 17, 1984; claims which overlap more than one section are counted in each section in which they occur.)

FLPMA was passed October 21, 1976.

Scale: 1/2 inch=1 mile

Source: USDI BLM, Las Cruces District, 1985





a. Base and Precious Metals (Copper, Gold, Silver, Molybdenum, Lead, Zinc)

The potential for metallic mineralization within the WSAs is low. Although Exxon Minerals Company has drilled several exploratory holes southeast of the Mount Riley WSA, they have shown no interest in the Mount Riley area itself. Based upon known mineral occurrences in the southwestern United States, Tertiary intrusives such as Mount Riley are not associated with copper porphyry type mineralization, but may be associated with precious metal deposits.

b. Cinders

Volcanic cinders are the most important mineral material resource in the West Potrillo Mountains WSA. Although cinders are present over most of the WSA, only three areas have moderate potential. These areas were delineated primarily because they are located close to existing physical access; other areas may have cinders of equal or better quality, but are not presently accessible for development.

One cinder cone, Guzman's Lookout Mountain (T. 28 S., R. 4 W., Section 35), in the south-central part of the West Potrillo Mountains WSA was extensively mined in the past under the General Mining Law of 1872. However, since 1955, cinders have been classified as saleable minerals and are no longer locatable under the mining laws. There are currently 6 pre-FLPMA mining claims in the West Potrillo Mountains WSA which were located for cinders in 1946. These are the Chaparral claims in T. 29 S., R. 3 W., Section 6, where grandfathered cinder mining operations are presently being conducted under a Plan of Operations. (See Map 33/34-3 for location of claims.) This area has high potential for cinders. (See Map 33/34-2.)

B. Watershed

Water use within the West Potrillo Mountains and Mount Riley WSAs is primarily by livestock and wildlife. There are eight dirt tanks inside the West Potrillo Mountains WSA that utilize surface runoff (see Livestock Grazing). Two small water spreading dikes are also located within the West Potrillo Mountains WSA for erosion control. Additionally, several well facilities and dirt tanks for livestock watering are located at the end of cherry-stemmed roads or just outside the WSAs' boundaries.

The West Potrillo Mountains and Mount Riley WSAs are within the Lower Rio Grande declared underground water basin and ground water use is administered by the New Mexico State Engineer.

C. Livestock Grazing

1. Allotments

Parts of five grazing allotments are within the West Potrillo Mountains and Mount Riley WSAs. Some areas within the WSAs such as the



## WEST POTRILLO MOUNTAINS AND MOUNT RILEY

upper elevations of Mount Riley and the West Potrillo Mountains cinder cones are ungrazed by livestock due to the lack of water, the steep slopes, and the rough and broken terrain in the malpais (lava rock). Licensed grazing use on public land includes cattle and a few horses.

### ALLOTMENTS WITHIN THE WSAs<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSAs	Percent Allotment
POL 3016	83,114	5,688	27,223	33%
Kilbourne Hole 3023	85,488	5,760	10,596	12%
West Potrillos 3029	94,682	8,446	50,327	53%
Mount Riley 3033	75,360	5,448	45,474	60%
Thousand Springs 3039	52,327	5,508	21,485	41%
TOTAL			155,105	

## 2. Ranch Management

### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSAs<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
POL 3016	dirt tank	T. 27 S., R. 4 W., Sec. 26
Kilbourne Hole 3023	interior fence	2½ miles
West Potrillos 3029	dirt tank	T. 27 S., R. 3 W., Sec. 12
	dirt tank	T. 27 S., R. 3 W., Sec. 9
	interior fence	9½ miles
Mount Riley 3033	dirt tank	T. 27 S., R. 3 W., Sec. 8
	water spreaders	T. 28 S., R. 3 W., Secs. 17, 34
Thousand Springs 3039	dirt tank	T. 29 S., R. 4 W., Sec. 4
	dirt tank	T. 28 S., R. 5 W., Sec. 24
	dirt tank	T. 28 S., R. 5 W., Sec. 21
	dirt tank	T. 28 S., R. 4 W., Sec. 23

Note: <sup>a/</sup>Information shown in tables reflects only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

### Boundary Fences:

POL 3016 and West Potrillos 3029	3¾ miles
Thousand Springs 3039 and POL 3016	7¼ miles
Thousand Springs 3039 and Mount Riley 3033	5½ miles
POL 3016 and Mount Riley 3033	6¾ miles
Kilbourne Hole 3023 and West Potrillos 3029	5 miles
Kilbourne Hole 3023 and Mount Riley 3033	3½ miles
Mount Riley 3033 and West Potrillos 3029	4½ miles



#### D. Recreation

Recreational activities in the West Potrillo Mountains and Mount Riley WSAs include off-road vehicle (ORV) use, sightseeing, rockhounding, and hunting.

ORV use occurs on vehicle trails throughout the area and along boundary roads often associated with other recreation activities such as those described below. No motorized cross-country travel is allowed in the West Potrillo Mountains WSA. The WSA was designated as limited to designated roads and trails under an emergency ORV closure on June 4, 1982. The purpose of the emergency closure is to prevent off-road travel on vibroseis lines within the WSA which would hinder rehabilitation of the lines.

Zoological sightseeing opportunities are fair in and around Indian Basin, which is winter habitat for ferruginous, rough-leg, red-tail, and other hawks. Quail, dove, and duck hunting occurs in Indian Basin. Rockhounds look for geodes in the West Potrillo Mountains. The geodes are of volcanic origin and occasionally have crystalline centers.

The 1975 Management Framework Plan (MFP) for the Las Uvas Planning Unit recommended that a study be conducted to determine the value of the central part of the West Potrillo Mountains as a primitive area. The public participation record for the 1975 MFP indicated public support for the study at that time.

Primitive, nonmotorized recreation opportunities are described in Chapter IV, Primitive and Unconfined Recreation.

#### E. Education/Research

Dr. Reid of the University of Texas at El Paso indicates that R. D. Worthington will start a floristic survey of the West Potrillo Mountains and Mount Riley area to determine what plants are present, how they are disturbed, and what environmental factors influence them. Dr. Paul Minnis has expressed interest in working on a Mimbres site in Indian Basin in the near future.

#### F. Realty Actions

The Southern Pacific Railroad right-of-way forms the major portion of the southern boundary of the West Potrillo Mountains WSA. The railroad tracks have been removed and parts of the old railroad grade combine with existing dirt roads to provide access to mining claims and rangeland developments. There have been proposals to upgrade and pave this road known as the Columbus-Anapra road; however, no plans have as yet been finalized.

#### G. Vegetative Products

An area of approximately 23,040 acres in the vicinity of Indian Basin in the southwest part of the West Potrillo Mountains WSA was identified in the Southern Rio Grande MFP (BLM 1981) as a potential vegetative collection and sale area for yucca, ocotillo, cacti, sotol base, yucca stalks, fourwing saltbush seed, and mesquite.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

The West Potrillo Mountains and Mount Riley WSAs generally appear natural. Human imprints affecting the naturalness of the West Potrillo Mountains WSA include dirt tanks, vehicle trails, fences, cherry-stemmed roads, and cinder mining activities. The Mount Riley WSA is virtually pristine with the exception of 4 miles of fence.

Eight dirt tanks are within the boundary of the West Potrillo Mountains WSA. Two-track vehicle trails provide access to seven of the dirt tanks. The remaining tank appears to be accessed by cross-country travel.

A web of 72 miles of vehicle trails cover the West Potrillo Mountains WSA. All of these are two-track with vegetation growing in the center. The trails are generally unnoticeable unless standing directly on or walking along the trails. The trails provide access within livestock grazing allotments, to other allotments, and to rangeland developments.

Forty-eight miles of fence crisscross the WSAs. All have wooden posts and blend in well with the landscape. Vehicle trails run along approximately 20 miles of the fences.

Twelve roads are cherry-stemmed into the West Potrillo Mountains WSA. The two longest cherry-stems penetrate 4 miles into the WSA. Most of the remaining roads penetrate 2 miles or less into the area. Three of these roads enter the WSA from the south, six from the east, and three from the west boundary. These roads provide access to livestock watering facilities and cinder mining activities.

Cinder mining impacts are found in the southern part of the West Potrillo Mountains WSA (see Map 33/34-2 for general locations of cinder claims). The cinder mine at Guzman's Lookout Mountain furnished the cinders for the old Southern Pacific railroad bed (now the Columbus-Anapra road) that forms most of the southern boundary of the WSA. The south and southwest slopes of the mountain are heavily impacted. There is no ongoing activity at this site.

Currently, cinder mining is taking place on one of six placer claims  $2\frac{1}{2}$  miles southeast of Guzman's Lookout Mountain. These claims were located prior to the passage of the Federal Land Policy and Management Act (FLPMA) on October 21, 1976, and operations are proceeding in the same manner and degree as on that date. A new cut (pit) on the northeast slope of a cinder cone was excavated in August of 1981. At this stage in the mining operations, the mine is screened topographically because of its



location and proximity to other cinder cones in the vicinity and the subtle color contrast between the surface and subsurface material renders the mine virtually invisible from a distance.

Three geophysical exploration lines (vibroseis lines) were completed in the northwest and northeast parts of the West Potrillo Mountains WSA in March and April of 1982. The line in the northwest part of the WSA is approximately 5 miles long. The lines in the northeast part of the WSA are approximately 3 and 8 miles long. Reclamation work was done on the lines and their condition is being monitored by the BLM. Vehicular travel is prohibited on the lines (See Chapter III, Recreation). The lines are expected to be substantially unnoticeable by the time the Secretary of the Interior is scheduled to present wilderness suitability recommendations to the President as required by the nonimpairment criteria in the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1979).

Several factors mitigate the impacts of the imprints of man described above. First of all, most of the imprints in the West Potrillo Mountains WSA are associated with livestock grazing and their impacts on naturalness are not significant.

Secondly, the vast size of the West Potrillo Mountains WSA in combination with the topographic variation serve to dilute the effects of the imprints. The WSA is, on the average, 12 miles wide (east-west axis) and 20 miles long (north-south axis). Within this vast area, the topography includes playas, sand dunes, and over 48 volcanic cones.

Thirdly, the imprints are distributed throughout the West Potrillo Mountains WSA. For example, the network of vehicle trails roughly divides the WSA into pristine parcels that vary in size from 7,000 acres to 20,000 acres.

The cumulative impacts of human imprints within the West Potrillo Mountains do not greatly affect the quality of overall naturalness in the WSA. Both WSAs generally appear to have been affected primarily by the forces of nature.

#### b. Solitude

Both the West Potrillo Mountains and Mount Riley WSAs provide outstanding opportunities for solitude. In the Mount Riley WSA, the three separate peaks and the radial drainage ways down the slopes provide topographic screening of visitors. There is some potential for user concentrations in the larger drainages separating Mount Riley and Mount Cox where climbing is less difficult.

Due to the vast size, blocked-up boundary configuration, and varied topography of the West Potrillo Mountains WSA, opportunities to avoid the sights and sounds of others are found throughout the area. Access points into the WSA are numerous and dispersed. This further enhances opportunities for solitude. The quality of solitude opportunities in the



West Potrillo Mountains is a major factor in the overall value of the area for wilderness.

c. Primitive and Unconfined Recreation

Outstanding opportunities for primitive recreation in the West Potrillo Mountains WSA include hiking, backpacking, hunting, and geological sightseeing. The large size and blocked-up configuration of the WSA make a 3-4 day backpack through the area possible. The lack of water and rough and rubbly volcanic surfaces make backpacking and hiking somewhat challenging. The variety of volcanic formations (cinder cones with craters, herraduras, and spatter cones) add geologic interest. The solitude of the area contributes favorably to primitive recreation experiences.

Climbing opportunities exist in the Mount Riley WSA. Although challenging, these opportunities are not considered outstanding.

2. Special Features

The West Potrillo Mountains and Mount Riley WSAs contain special ecological and cultural features of scientific and educational value.

The ecological features include both vegetation and wildlife values. The WSAs provide habitat for a Bureau sensitive plant species proposed for Federal listing, a plant species of special concern to the New Mexico State Heritage Program (NMSHP) (see Chapter II, Vegetation), and an endemic mollusc, Ashmunella rileyensis, which is also listed as an element of concern by the NMSHP. The WSAs are significant for wildlife because of the number of wildlife habitat sites within the areas and the large size of the WSAs (see Chapter II, Wildlife).

The cultural features of the WSAs include Classic Mimbres and El Paso phase sites which would provide information regarding settlement in a marginal area (see Chapter II, Cultural).

Future projects of scientific and educational value planned in this area include a floristic survey of the West Potrillo Mountains and Mount Riley and a study of a cultural site in Indian Basin (see Chapter III, Education/Research).

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the West Potrillo Mountains and Mount Riley WSAs as being in the Chihuahuan



Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetation variety and diversity of the WSAs. Further refinement of the system shows the following vegetation types in the WSAs:

<u>Vegetation Types</u>	<u>Acres</u>
creosote	52,539
Trans-Pecos shrub savanna	61,172
mesquite-acacia savanna	36,165
grama-tobosa shrubsteppe	5,229

b. Distance From Population Centers

The West Potrillo Mountains and Mount Riley WSAs are approximately 1 hour driving time from El Paso, Texas; 1 hour from Las Cruces, New Mexico; 5 hours from Albuquerque, New Mexico; 6 hours from Tucson, Arizona; and 8 hours from Phoenix, Arizona.

B. Manageability

Several factors affect the ability of the West Potrillo Mountains and Mount Riley WSAs to be managed as wilderness in the long-term: State land, private subsurface mineral estate, mining claims and existing mining activities, off-road vehicle (ORV) use, and the size and shape of the WSAs.

State land inholdings total 12,051 acres in the West Potrillo Mountains WSA. Three parcels of private subsurface mineral estate totaling 1,440 acres are cherry-stemmed in the West Potrillo Mountains WSA. A 640-acre inholding of private subsurface mineral estate is located in the Mount Riley WSA. Nonwilderness or incompatible uses on the State land or exploitation of the private subsurface mineral estate could impact the wilderness values of the West Potrillo Mountains and Mount Riley.

At the present time, there are no special uses on the State sections except grazing leases. Although all of the State acreage is leased for oil and gas, none of the State parcels or private subsurface mineral estate parcels are located in the southwestern part of the West Potrillo Mountains WSA, where there is moderate potential for oil and gas accumulations. The cherry-stemmed parcels of private subsurface mineral estate in the two WSAs are all in areas of low mineral potential. Since the West Potrillo Mountains WSA is so large, the impacts of nonwilderness uses on non-Federal lands would not have major impacts on the wilderness values or manageability of this WSA.

If the West Potrillo Mountains and Mount Riley WSAs are designated wilderness, certain State land and private mineral estate parcels should have a high priority for acquisition. The acquisitions would greatly



## WEST POTRILLO MOUNTAINS AND MOUNT RILEY

enhance the manageability and wilderness values of these areas. Lands recommended for acquisition under the All Wilderness and Amended Boundary Alternatives are legally described below.

### Lands Recommended for Acquisition Under the All Wilderness Alternative

<u>Legal Description</u>	<u>Acres</u>
State Land	
T. 25 S., R. 3 W., Section 32, All	640
T. 25 S., R. 4 W., Section 36, All	640
T. 26 S., R. 2 W., Section 30, NE $\frac{1}{4}$	160
Section 32, All	640
T. 26 S., R. 3 W., Section 15, NE $\frac{1}{4}$	160
Section 16, All	640
Section 26, NW $\frac{1}{4}$	160
Section 32, All	640
Section 36, All	640
T. 26 S., R. 4 W., Section 2, All	640
Section 36, All	640
T. 27 S., R. 3 W., Section 2, All	640
Section 16, All	640
Section 32, All	640
Section 36, All	640
T. 27 S., R. 4 W., Section 1, S $\frac{1}{2}$ NE $\frac{1}{4}$	80
Section 2, All	640
Section 32, All	640
Section 36, All	640
T. 28 S., R. 3 W., Section 2, All	640
Section 16, NW $\frac{1}{4}$ , S $\frac{1}{2}$	480
Section 32, All	640
T. 28 S., R. 4 W., Section 2, All	640
Section 16, All	640
Section 32, All	640
Section 36, All	640
T. 28 S., R. 5 W., Section 36, N $\frac{1}{2}$ , N $\frac{1}{2}$ S $\frac{1}{2}$	480
T. 29 S., R. 4 W., Section 2, All	640
TOTAL	15,600
Private Land	
T. 29 S., R. 3 W., Section 6, S $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$	20
Section 7, N $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$	20
TOTAL	40



WEST POTRILLO MOUNTAINS AND MOUNT RILEY

<u>Legal Description</u>	<u>Acres</u>
Non-Federal Subsurface (Mineral) Estate	
T. 27 S., R. 2 W., Section 16, All	640
Section 32, All	640
T. 28 S., R. 3 W., Section 16, NE $\frac{1}{4}$	160
T. 29 S., R. 3 W., Section 2, All	<u>640</u>
TOTAL	2,080

Should the area described under the Amended Boundary Alternative (see Map 33/34-1) be designated wilderness, all of the lands described above with the exceptions noted below should be acquired.

State Land	
T. 28 S., R. 4 W., Section 36, All	640
T. 29 S., R. 4 W., Section 2, All	640
Non-Federal Subsurface (Mineral) Estate	
T. 29 S., R. 3 W., Section 2, All	640

Under the Amended Boundary Alternative, a total of 14,280 acres of State land and 1,440 acres of non-Federal subsurface (mineral) estate is recommended for acquisition.

Mining claims in the south-central part of the West Potrillo Mountains WSA and the southeast part of the Mount Riley WSA could affect the manageability of these areas as wilderness in two ways:

- (1) The FLPMA specifies that mining uses that existed on the date of approval of the Act (October 21, 1976) may continue in the same manner and degree during the time that an area is under wilderness review. Such mining uses are grandfathered and may continue even if the uses would impair wilderness suitability.

In addition, mining claimants may be recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976, and the claimant can show BLM that the claim continues to be supported by such a discovery. Valid existing rights convey a more liberal development standard than grandfathered rights in that activities on valid claims are not limited to the same manner and degree. When it is determined that the valid existing rights can be exercised only through activities that will impair wilderness suitability, the activities will be regulated only to prevent unnecessary and undue degradation.

In either of the above instances, the wilderness values in the vicinity of the pre-FLPMA claims around Mount Riley or the Chaparral cinder claims in the West Potrillo Mountains could be degraded before the area is designated wilderness.



Activities on the Chaparral claims are presently proceeding in the same manner and degree under the grandfather clause and are expected to degrade wilderness values in this part of the WSA in the long-term.

- (2) Once an area is designated wilderness, the provisions of the Wilderness Act of 1964 and the Wilderness Management Policy (WMP) (BLM 1981) apply. Under the Wilderness Act and the WMP, holders of mining claims, either pre-FLPMA or post-FLPMA, validly established in the area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the valid existing rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, the wilderness values in the vicinity of valid mining claims could be degraded after the area is designated wilderness.

The Chaparral cinder claims represent a major negative impact on the wilderness manageability of the south-central part of the West Potrillo Mountains WSA since production is presently occurring and it is highly probable that the validity exam required after wilderness designation would confirm that the claims represent valid existing rights. Based on the locatable mineral potential in the Mount Riley area, it is unlikely that the claims inside the boundary of the Mount Riley WSA would prove to be valid.

Another manageability concern is ORV use. There are 72 miles of vehicle trails in the West Potrillo Mountains WSA. Preventing use on these trails after wilderness designation would require signs at a minimum and possibly barriers. If trespass ORV use became a problem, wilderness values such as naturalness and solitude could suffer.

The size, shape, and topographic variety of the WSAs, however, enhance the manageability of the WSAs. As visitor use increases, these areas would be able to absorb the additional visitation without negative effects on wilderness values.

With the exception of the south-central part of the WSA where the six pre-FLPMA cinders claims are located, the West Potrillo Mountains and Mount Riley WSAs could be managed in the long-term to preserve existing wilderness values.



## V. CONSULTATION AND COORDINATION

## A. Public Involvement Overview

Personal letters, form letters, and petitions were received on the West Potrillo Mountains and Mount Riley WSAs during the public comment periods on the New Mexico Wilderness Review Initial Inventory Decisions (BLM 1979) and the New Mexico Wilderness Study Area Proposals (BLM 1980). The WSA proposal for these areas was among the ten most commented upon recommendations in the State. Additional data submitted with the public inputs included maps and legal descriptions of developments.

Approximately 43 percent of the personal letters supported further wilderness review of the West Potrillo Mountains and Mount Riley. Supporting comments cited naturalness, outstanding opportunities for solitude and recreation, and geological supplemental values as justification. The area's large size, diverse topography, proximity to large population centers, and dispersed access points were listed as contributing factors to outstanding opportunities.

Approximately 57 percent of the personal letters opposed wilderness review of these two areas. About half of the opposing comments listed resource conflicts such as aggregate minerals, oil and gas potential, geothermal energy potential, and grazing. There was also concern that wilderness designation would "hinder, in the future, the use of the large water basin in these areas by the City of Las Cruces and Dona Ana County and prevent access to the elderly and the handicapped." Other comments listed roads, rangeland developments, and vehicle trails as impacts on naturalness and described opportunities for solitude as less than outstanding due to the outside sights and sounds of the Southern Pacific Railroad, Interstate 10, and the low level crossings of military aircraft.

During the public comment period on the New Mexico Wilderness Supplemental Draft Environmental Assessment (BLM 1983), 31 personal letters, 13 form letters, 1 petition with 15 signatures, and 52 coupons were received indicating support for wilderness designation of the West Potrillo Mountains and Mount Riley WSAs. About half of the personal letters and all of the form letters, coupons, and petition listed no reasons for supporting wilderness designation for these areas. One input questioned the appropriateness of recommending these areas suitable for wilderness designation.

Many of the comments favoring wilderness designation were similar to those made in previous public comment periods; these included "extensive and very wild," "hiking opportunities," and "outstanding scenic, wildlife, botanic, and cultural resources." Several comments addressed the size and boundaries of the area that should be recommended suitable for wilderness. The comment was made that Kilbourne Hole or Phillip's Hole should have been included in the WSAs to complement the geological values of the West Potrillo Mountains and Mount Riley WSAs. Support was also indicated for an area of 205,000 acres, which is greater than the existing WSA acreage.



## WEST POTRILLO MOUNTAINS AND MOUNT RILEY

Several comments pertained to BLM's selection of the Amended Boundary Alternative. Only one of the inputs concurring with the amended boundary recommendation included a rationale. This input stated, "The amended boundary will not change the character of the WSA. Its varied topography and unimpaired views will not be disrupted by excluding the area south of Guzman Lookout." The New Mexico Wilderness Study Committee disagreed with the amended boundary, stating, "Removing 8,005 acres seems an unnecessarily large exclusion to eliminate the cinder claims in the southern part...exclusion could be smaller and still not cause management problems."

The importance of the West Potrillo Mountains and Mount Riley in terms of adding diversity to the National Wilderness Preservation System was emphasized in several personal letters. These comments expressed the general idea that as large an area as possible of the southwestern New Mexico desert should be preserved and that these WSAs will become more important as the population centers of the southwest grow.

The New Mexico Department of Game and Fish indicated agreement with the Amended Boundary Alternative, but felt a statement should be included that would allow "in the future the development of water, manipulation of habitat, and allow access to department personnel to manage the wildlife resource."

The New Mexico Department of Agriculture's (NMDA) comments stated that the impacts to the range livestock industry for the West Potrillo Mountains and Mount Riley WSAs were inadequately addressed and also that "Manageability concerns, split estate, and resource conflicts in this area are significant enough, in our opinion, to question the appropriateness of the proposed action."

### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to locatable minerals, water, soils, vegetation, wildlife, visual, cultural, air, recreation, realty actions, education/research, and vegetative products are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.



### SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Expanding the WSA to Include Kilbourne Hole or Phillip's Hole	This alternative was not considered because it would require consideration of lands not designated for wilderness study and unprotected by the BLM Interim Management Policy. The size and boundaries of the WSA were determined by land status and the location of roads.
An Alternative that Includes a Different Amended Boundary	Additional amended boundary alternatives were not analyzed because the amended boundary developed by BLM adequately deals with significant resource and manageability conflicts.
Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Saleable Minerals (Cinders)	Permits to remove mineral materials would not be issued in designated wilderness areas. Although approximately 1,400 acres with high potential and 7,400 acres with moderate potential for mineral material sales (cinders) could be affected, the impacts would not be significant because of the availability of similar materials elsewhere.
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.
Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
Amended Boundary (Proposed Action)	This alternative was formulated to deal with manageability conflicts resulting from existing cinder mining activities under the 1872 Mining Law and to exclude acreage with high potential for mineral material sales of cinders
No Action/No Wilderness	Required by the BLM Wilderness Study Policy.

#### Issues Selected for Detailed Analysis

The quality of the wilderness values, manageability, and oil and gas potential are the primary issues identified for these two WSAs. High quality wilderness values were attributed to the area's large size, diverse topography, proximity to large populations centers, and dispersed access points. Manageability concerns associated with wilderness designation include State land inholdings, a private subsurface mineral estate inholding, cinder mining activities, and existing off-road vehicle use patterns.

If the West Potrillo Mountains WSA is designated wilderness, oil and gas exploration would not be possible on approximately 8,000 acres with moderate potential. The impacts on oil and gas are not considered significant because of the minimal acreage involved and the location of the acreage along the periphery of the WSA. This issue will be discussed, however, because of Statewide interest.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 155,105 acres of public land within the West Potrillo Mountains and Mount Riley WSAs would be recommended suitable for wilderness designation. (See Map 33/34-1 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would provide the wilderness values present in the areas with significant long-term Congressional protection. Natural values, outstanding opportunities for solitude, outstanding opportunities for hiking, backpacking, hunting, and geological sightseeing, and special ecological and cultural features would generally be maintained in the West Potrillo Mountains WSA. The Mount Riley WSA's pristine natural values, outstanding opportunities for solitude, and special ecological features would also be maintained.

It is highly likely that the six cinders claims in the West Potrillo Mountains WSA would be found valid. Mining operations on the 520 acres covered by the claims would significantly degrade natural values, opportunities for solitude and primitive recreation, and special features in the long-term since the mining of cinders involves significant excavation of cinder cones. The mining operations on these claims would significantly impact the manageability of the extreme south-central part of the WSA in the long-term.

Other manageability considerations could impact the capability of the West Potrillo Mountains and Mount Riley WSAs to be managed as wilderness in the long-term. Nonwilderness uses on the State land inholdings or the private subsurface mineral estate parcels in or near the WSAs could degrade wilderness values. The impacts on wilderness values could be minimal to major depending on the location, type, and extent of development and access requirements. However, extensive development of these parcels is highly unlikely and attempts would be made to acquire 15,600 acres of State land, 40 acres of private land, and 2,080 acres of non-Federal subsurface (mineral) estate within and adjacent to the area to enhance manageability.

At the present time, the West Potrillo Mountains and Mount Riley WSAs, with the exception of the cinder mining claims, could be managed as wilderness.

#### 2. Impacts to Oil and Gas

It is assumed that no new oil and gas leases would be let after wilderness designation. Existing leases would not be reissued if



unexplored through drilling upon their expiration date. If a discovery were made in an area adjacent to the WSA, it would not be possible to fully evaluate the WSAs' oil and gas potential because of the restrictions of wilderness management. Although there is an area of 8,000 acres in the southwest part of the West Potrillo Mountains WSA identified as having moderate oil and gas potential, the impacts on oil and gas would not be significant because of the minimal WSA acreage involved and the location of the acreage along the periphery of the WSA. It would be possible to explore a major portion of the moderate potential area through directional drilling from outside the WSA boundary.

### 3. Impacts to Livestock Grazing

Generally, motorized access on the 72 miles of existing vehicle trails within the designated wilderness would not be permitted. However, if there were no practical alternatives, permits for vehicular access could be authorized for maintenance of the 1 dirt tank on POL (3016), 2 dirt tanks and 3½ miles of interior fence on the West Potrillos (3029), 1 dirt tank on Mount Riley (3033), and 4 dirt tanks on Thousand Springs (3039) that have existing vehicular access. Boundary fences with existing vehicular access include: 4 miles between Thousand Springs (3039) and Mount Riley (3033), 3 miles between POL (3016) and Mount Riley (3033), and ¼ mile between Mount Riley (3033) and the West Potrillos (3029). Permits would be required for vehicular access to these fences.

Use of motorized vehicles on the existing vehicle trails to check cattle would not be permitted. Checking cattle on foot or horseback could have an impact on livestock management and costs.

The impacts of wilderness designation on any one livestock operator would not be significant and would consist primarily of minor inconveniences due to restricted vehicular access.

### B. Amended Boundary (Proposed Action)

Under the Amended Boundary Alternative, 147,100 acres of public land within the West Potrillo Mountains and Mount Riley WSAs would be recommended suitable for wilderness designation (see Map 33/34-1 for amended WSA boundary).

The amended boundary would exclude 8,005 acres of public land in the southern part of the West Potrillo Mountains WSA. This boundary adjustment would exclude the six cinder claims (Chaparral Numbers 1-6) from the area recommended suitable for wilderness.

If the area within the amended boundary is designated wilderness, existing and potential uses (see Chapter III) would be regulated by the Wilderness Management Policy (BLM 1981) as described under the All Wilderness Alternative.



1. Impacts to Wilderness Values

The wilderness values and special features within the amended boundary would be provided with long-term Congressional protection. Natural values, outstanding opportunities for solitude and primitive recreation, and special ecological and geological features would be maintained in the West Potrillo Mountains WSA. Natural values, outstanding opportunities for solitude, and special ecological features would be maintained in the Mount Riley WSA.

The exclusion of the grandfathered cinder mining claims from the area recommended suitable would significantly enhance the manageability of the designated West Potrillo Mountains wilderness in the long-term.

Nonwilderness uses on the State land inholdings or the private subsurface mineral estate parcels in or near the WSAs could impact wilderness values in the long-term. However, at the present time, development of these parcels appears unlikely and attempts would be made to acquire 14,280 acres of State land and 1,440 acres of non-Federal subsurface (mineral) estate to enhance the manageability of the area designated wilderness. All of the area within the amended boundary could be managed as wilderness in the long-term.

2. Impacts to Oil and Gas

The impacts to oil and gas resources under the Amended Boundary Alternative would be the same as those described under the All Wilderness Alternative.

3. Impacts to Livestock Grazing

Generally, motorized access on the 65½ miles of existing vehicle trails within the designated wilderness would not be permitted. However, if there were no practical alternatives, permits for vehicular access could be authorized for maintenance of the 1 dirt tank on POL (3016), 2 dirt tanks and 3½ miles of interior fence on the West Potrillos (3029), a dirt tank on Mount Riley (3033), and 4 dirt tanks on Thousand Springs (3039). Vehicular access to these developments would be permitted along existing vehicle routes. Permits would also be required for access to the following lengths of boundary fence with existing vehicular access: 3 miles between Thousand Springs (3039) and Mount Riley (3033), 3 miles between POL (3016) and Mount Riley (3033), and ¼ mile between Mount Riley (3033) and the West Potrillos (3029).

C. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 155,105 acres of public land within the West Potrillo Mountains and Mount Riley WSAs would be recommended nonsuitable for wilderness designation.

If the WSAs are not designated wilderness, existing uses would continue and potential uses could be implemented as described in Chapter III.



### 1. Impacts to Wilderness Values

The impacts of the mining activities on the Chaparral cinder claims on wilderness values in the south-central part of the West Potrillo Mountains WSA would be the same as those described under the All Wilderness Alternative. The impacts to wilderness values would be similar in any new mineral material sales areas established for cinders in the West Potrillo Mountains WSA.

The restriction of all vehicles to existing roads and trails would provide some protection for existing wilderness values by preventing cross-country vehicle use and proliferation of roads that could partition the area into smaller roadless areas. However, continued ORV access on the 72 miles of vehicle trails within the WSAs would periodically disrupt solitude in the vicinities of the vehicle trails.

Exploration activities for oil and gas could temporarily impact natural values. Any energy minerals activities in the area of 80,600 acres in the central part of the West Potrillo Mountains and southern half of Mount Riley would be restricted to protect primitive values.

The wilderness values and special features of the West Potrillo Mountains and Mount Riley WSAs would not be protected through Congressional designation. Although portions of the West Potrillo Mountains and Mount Riley WSAs would probably retain their natural values, outstanding opportunities for solitude and primitive recreation, and special features in the short-term, management of the WSAs as specified in land use plans would be subject to administrative change and the impacts to wilderness values could be significant in the long-term.

### 2. Impacts to Oil and Gas

Oil and gas leasing would continue. Vehicle use in connection with exploration activities would be restricted to existing roads and trails. Oil and gas drilling, development, or production activities in an area of 80,600 acres in the central part of the West Potrillo Mountains WSA and south half of the Mount Riley WSA would comply with the constraints of the protective stipulation for primitive values. Compliance with the stipulation could result in no surface occupancy areas or restrictions on types and locations of access. Such restrictions could result in additional operating costs for the energy minerals industry. However, the best potential for oil and gas in the two WSAs appears to be an area of 8,000 acres with moderate potential in the southwest part of the West Potrillo Mountains WSA. This area is outside the 80,600 acres covered by the protective stipulation for primitive values. The cumulative impacts to oil and gas resources would not be significant.

### 3. Impacts to Livestock Grazing

all rangeland developments could be checked and maintained on a convenience basis using motorized equipment on existing roads and trails. No impacts to existing livestock grazing management would occur under this alternative.







## APPENDIX 35

### BROKEOFF MOUNTAINS WSA (NM-030-112)

#### I. GENERAL DESCRIPTION

##### A. Location

The Brokeoff Mountains Wilderness Study Area (WSA) is located in the southeastern corner of Otero County, New Mexico (T. 24-26 S., R. 19-20 E.), just north of Guadalupe Mountains National Park.

The U.S. Geological Survey (USGS) topographic maps covering the WSA are the Cienega School, El Paso Gap, La Paloma Canyon, Panther Canyon, and Sheep Draw, New Mexico quadrangles. All of these maps are at the 15-minute scale.

##### B. Climate and Topography

Hot summers (60°-100°F) and mild winters (25°-55°F) characterize the WSA. Precipitation occurs primarily during the summer and ranges between 8 and 14 inches annually.

The WSA consists of a desert mountain range which follows a north-south trend and abuts the southwestern wall of the Guadalupe Escarpment near the New Mexico-Texas State Line. The range gradually ascends from an average height of 4,600 feet in the northern half of the WSA to a high point of 6,550 feet on Cutoff Ridge.

Two canyons, each 500-600 feet deep, and a ridge are the dominant topographic features. Chosie Canyon (with its tributary Wildcat Canyon) and Humphrey Canyon (which splits into Panther and West Dog Canyons) drain to the west and their drainages engulf the central two-thirds of the WSA. Cutoff Ridge, in the southernmost portion of the WSA, rises 3,000 feet above the surrounding terrain and leads directly to the Guadalupe Escarpment. Several smaller ridges and canyons are present in the central and northern portions of the WSA while the western boundary consists of flat terrain.

##### C. Land Status

The WSA contains 31,386 acres of public land and 1,520 acres of State inholdings. (See Map 35-1 for land status within the WSA.)


##### D. Access

The western boundary of the WSA is accessible from privately maintained ranch roads branching off State Highway 506. These roads can be followed around the northern and eastern edges of the WSA.

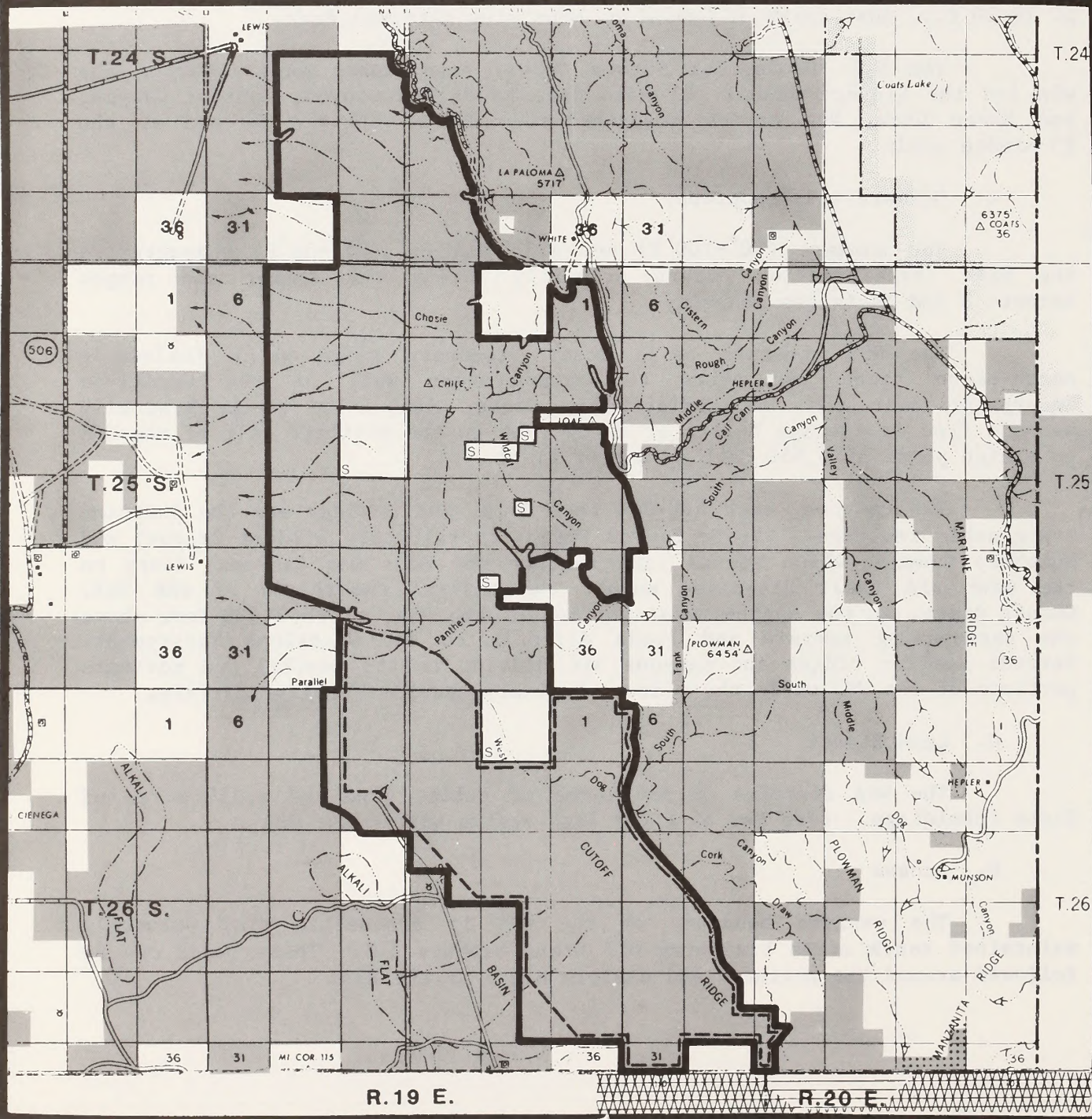


### Proposed Action--No Action/No Wilderness Alternative

MAP 35-1  
LAND STATUS

 **Guadalupe Mtns. Wilderness Area**

Source: USDI BLM, Las Cruces District,  
January 1985





## E. Proposed Action, Alternatives, and Issues

## DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	Amended Boundary	No Action/ No Wilderness (Proposed Action)
°Manage 31,386 acres as wilderness.	°Manage 12,277 acres as wilderness.	°Manage 31,386 acres without wilderness protection.
-Close 4 miles of vehicle trails.		-Vehicle use would be allowed to continue.
-Require permits for vehicular access to one dirt tank.		
-31,386 acres would be closed to future oil and gas leasing and mining claim location.	-12,277 acres would be closed to oil and gas leasing and mining claim location.	-31,386 acres would be open to oil and gas leasing and mining claim location.
-Exploration drilling could occur on two pre-FLPMA oil and gas leases.	-Exploration drilling could occur on one pre-FLPMA oil and gas lease.	-Oil and gas exploration drilling could occur.
-Attempts would be made to acquire 4,440 acres of State land.	-Attempts would be made to acquire 1,280 acres of State land.	-No special attempts would be made to acquire State land.
-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.	-Current levels of authorized grazing use would be maintained.
	°Manage 19,109 acres without wilderness protection.	
	-19,109 acres would be open to oil and gas leasing and mining claim location.	
	-Oil and gas exploration drilling could occur.	
	-Current levels of authorized grazing use would be maintained.	



## BROKEOFF MOUNTAINS

### SUMMARY OF SIGNIFICANT IMPACTS

Alternatives by WSA/Acreage	Major Environment Issues
	Wilderness Values
All Wilderness (31,386 acres)	Wilderness protection would maintain the entire area's natural appearance, outstanding opportunities for solitude, outstanding opportunities for hiking, backpacking, nontechnical rockclimbing, photography, and sightseeing, and scenic quality.
Amended Boundary (12,277 acres recommended suitable; 19,109 acres recommended unsuitable)	Wilderness protection would maintain values in the southern one-third of the WSA where the highest quality wilderness values are concentrated.
No Action/No Wilderness (Proposed Action) (31,386 acres)	Wilderness values would not receive long-term Congressional protection. The area's natural appearance, outstanding opportunities for solitude and primitive recreation, and scenic quality would probably be retained in the short-term. However, in the long-term, degradation of wilderness values could occur.



View of the West Side of the Brokeoff Mountains WSA.



## II. EXISTING RESOURCES

### A. Geology

The Brokeoff Mountains consist of north to northwest-trending blocks of faulted Permian sediments. These sediments were deposited approximately 250 million years ago along the northwest shelf of the Delaware Basin, a prolific oil producing area. The location of the basin fluctuated through the Permian period, resulting in horizontal and vertical facies changes representing basin, basin margin, and shelf environments. Dolomite, limestone, and lesser amounts of gypsum, sandstone, and shale are the major lithologic units present within the Brokeoff Mountains. These rocks often contain fossils which are generally molds or silica replacements of poor quality, with no unique significance.

Sediments in the Brokeoff Mountains dip westward into the adjacent Crow Flats syncline and are separated from the Guadalupe Mountains to the east by Dog Canyon, a complex down-dropped fault block. Closely spaced north to northwest-trending faults of relatively recent age are common throughout the range.

### B. Water

The Brokeoff Mountains WSA is situated within a closed basin (Salt Basin) which comprises approximately 5,900 square miles in Texas and New Mexico.

Principal drainage courses within the WSA include Chosie and West Dog Canyons which empty on the alkali flats to the west. Streams within these drainages flow for only brief periods following heavy precipitation.

Ground water in the WSA and to the immediate west occurs primarily in two geologic units: Bone Springs limestone and valley fill. In the valley to the west, water is normally less than 200 feet below the surface; in the upland area bordering the valley bottom, the depth normally exceeds 400 feet. Significant recharge to the ground water occurs in the WSA through infiltration in the large network of ephemeral streams.

### C. Soils

Five soil associations are present in the Brokeoff Mountains WSA (USDA 1981).

Soil Association	Acres	Percent of WSA	Texture	Slope
Rock Outcrop--Lozier Complex	26,898	85.7%	Gravelly Loam	20-65%
Reakov-Tome--Tencee Complex	3,139	10%	Silt Loam	0-5%
Gypsum Land--Holloman Complex	313	1%	Very Fine Sandy Loam	0-5%
Ector--Rock Outcrop Complex	94	.2%	Gravelly Loam	20-50%
Lozier--Rock Outcrop Complex	942	3%	Very Gravelly Loam	5-20%
TOTAL	31,386			



## BROKEOFF MOUNTAINS

### D. Vegetation

#### 1. General

Three range sites are present in the Brokeoff Mountains WSA.

Range Sites	Federal Acres	Percent of WSA	Major Vegetation
Limestone Hill	27,934	89%	Grassland (black grama, ring muhly, bush muhly, threeawn, slim triden, fluffgrass) Scattered Pinyon-Juniper
Gravelly Loam	3,139	10%	Grassland (black grama, dropseed, tobosa, burro grass) Desert Shrub (broom snakeweed, yucca, winterfat, creosote)
Gypsum	313	1%	Grassland (gyp grama, alkali sacaton, burro grass, tobosa) Desert Shrub (Mormon tea, chamisa, creosote)
TOTAL	31,386		

#### 2. Threatened or Endangered Plant Species

There are no known Federally-listed threatened or endangered plant species within the WSA. The following rare plants may occur in the Brokeoff Mountains.

Species: Sophora gypsophilia var. guadalupensis

Status: Federal candidate.

Habitat: Dry limestone slopes with one-seed juniper; 5,000-6,400 feet.

Species: Aletes filifolius

Status: Selected by New Mexico State Heritage program as a special concern element.

Habitat: Canyons and open slopes at the pinyon-juniper level; 5,500-7,500 feet.

Species: Nama xylopodum

Status: Selected by New Mexico State Heritage program as a special concern element.

Habitat: Cracks and crevices of limestone boulders and scarps; 4,500-6,000 feet.

Species: Lepidospartum burgessii

Status: Federal candidate.

Habitat: Gypseous ridges and flats; 4,500 feet.



Species: Dicranocarpus parviflora

Status: Selected by New Mexico State Heritage program as a special concern element.

Habitat: Dry plains, often in alkaline soil; 3,000-4,000 feet.

Species: Selinocarpus lanceolatus

Status: Selected by New Mexico State Heritage program as a special concern element.

Habitat: Gypsum soils; 3,500-5,500 feet.

#### E. Wildlife

A variety of wildlife utilize the different habitat types created by the various geomorphic features and diversity of vegetation of the Brokeoff Mountains (USDI 1974).

Cliffs, ledges, and rock outcrops provide suitable nesting and perching habitat for numerous bird species, particularly raptors. Canyon bottoms and mountain slopes throughout the area are utilized by mule deer year-round; however, populations fluctuate seasonally depending on the severity of winters in the nearby Guadalupe Mountains. Elk occasionally migrate from the Guadalupe Mountains and may be seen in the fall and winter. The degree to which these elk use the Brokeoff Mountains is not believed to be critical to the herd's viability.

#### F. Visual

The Brokeoff Mountains break off from the southwestern wall of the Guadalupe Escarpment. The Range then extends to the north, paralleling the western wall of the Escarpment, and provides scenic vistas for visitors to the Guadalupe Mountains National Park. Approximately 29,422 acres are within a Visual Resource Management (VRM) Class II area, while 1,964 acres along the western boundary are Class III.

#### G. Cultural

Archaeological information for the Brokeoff Mountains is incomplete. One processing/procurement site has been found in the area; however, it is not believed to be unique. Site density within the WSA is believed to be low.

#### H. Air

Generally the air quality of the Brokeoff Mountains WSA is good. The WSA has a Class II air quality classification, which allows for moderate deterioration associated with moderate well-controlled industrial and population growth. The nearest major sources of pollution are in El Paso, Texas and Ciudad Juarez, Mexico, 80 miles to the west.

The WSA adjoins Guadalupe Mountains National Park. The Park has been given Class I air quality classification.



## BROKEOFF MOUNTAINS

### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

##### 1. Energy Minerals (Oil and Gas)

Map 35-2 shows the locations of lands under mineral leases.

As of December 1, 1984, there were 9 Federal oil and gas leases in the WSA, 2 of which are pre-Federal Land Policy and Management Act (FLPMA) and 7 of which are post-FLPMA.

The Brokeoff Mountains WSA is adjacent to the western edge of the Delaware Basin, a known oil and gas producing area. Permian strata in the Brokeoff Mountains has been subjected to weathering and erosion and are therefore unlikely reservoirs for oil and gas accumulations. Oil and gas source and reservoir rocks may exist at depth in older Paleozoic strata, but it is probable that any previously existing oil and gas deposits were exposed to freshwater flushing because of the abundant faulting of the area. Although 3 wells drilled north of the WSA (6½ to 7½ miles) had shows of oil or gas, two wells drilled within 1 mile of the WSA boundary (T. 25 S., R. 20 E., Section 18 and T. 25 S., R. 19 E., Section 31) were dry.

Primarily because of the extensive faulting in the area, the potential for the discovery of oil and gas deposits within the Brokeoff Mountains WSA is low.

Teledyne Exploration Company conducted geophysical surveys adjacent to the western boundary of the WSA in the fall of 1983. Although future exploration for petroleum may occur in the WSA area, development is unlikely within the WSA.

##### 2. Nonenergy Minerals

No mining claims were located in the WSA as of September 17, 1984.

Limestone and dolomite suitable for building stone are plentiful throughout the WSA. Some of the major drainages may contain material suitable for aggregate. There are no prospective markets for these resources, however, and the potential for these materials is considered low.



# BROKEOFF MTNS. WSA (NM-030-112)

Proposed Action--No Action/No Wilderness Alternative

- BLM
- State
- WSA Boundary
- Amended Boundary

State ownership is identified only inside the WSA boundary.

Scale: 1/2 inch=1 mile

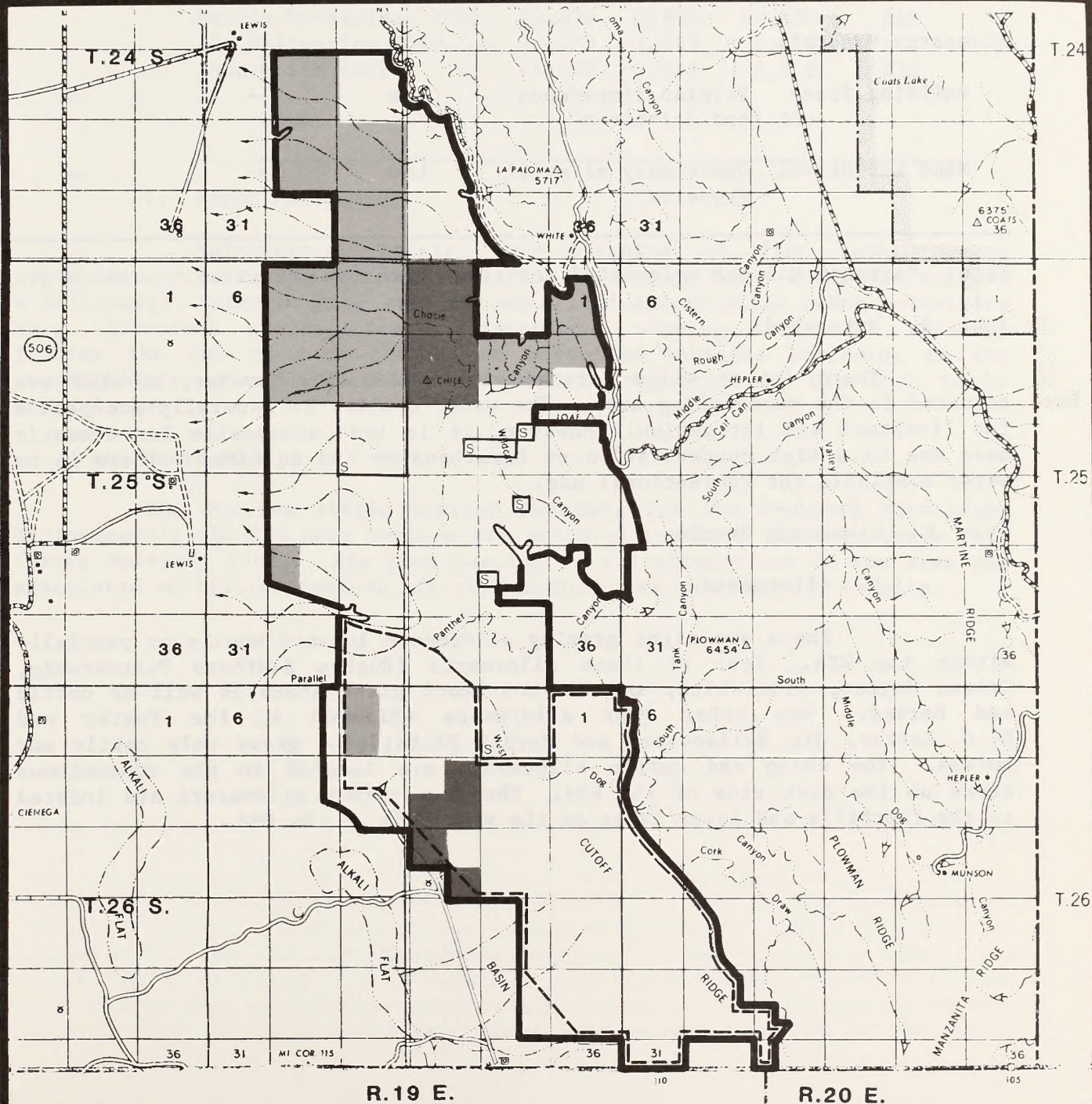
Source: USDI BLM, Las Cruces District, January 1985

## MAP 35-2 MINING CLAIMS AND MINERAL LEASES\*

- Pre-FLPMA Oil and Gas Leases
- Post-FLPMA Oil and Gas Leases

FLPMA was passed October 21, 1976.

\*No mining claims were recorded with the BLM within WSA as of September 17, 1984.





## BROKEOFF MOUNTAINS

### MINERAL RESOURCES POTENTIAL OF THE BROKEOFF MOUNTAINS WSA

Commodity	Geologic Environment	Mineral Resources Potential	Approximate Acreage*	Approximate Acreage Amended Boundary*
Energy Minerals				
Oil and Gas	Extensively faulted pre-Permian sediments	Low	--	--
Nonenergy Minerals				
Building Stone	Permian limestones and dolomites	Low	--	--
Sand and Gravel	Quaternary alluvial deposits	Low	--	--

Note: \*Acreage was not calculated for areas with low potential.

#### B. Watershed

There are no wells located within the WSA, however, several are situated in the surrounding area. The water quality is generally acceptable for livestock and irrigation. However, it is less acceptable for domestic uses due to a high concentration of bicarbonates and sulfates. There is no water available for recreational use.

#### C. Livestock Grazing

##### 1. Allotments

There are eight grazing allotments located wholly or partially within the WSA. Four of these allotments (Hughes Brothers Partnership, Orland Hughes, John White, and Clifton Dean) graze sheep as well as cattle and horses. The other four allotments (Diamond A, Les Foster and D. D. Barker, Jim Ballantine, and Marlin Richardson) graze only cattle and horses. The sheep and cattle allotments are located in the mountainous areas on the east side of the WSA. The four cattle allotments are located in the foothills and lower areas on the west side of the WSA.



## ALLOTMENTS WITHIN THE WSA

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Clifton Dean 9008	2,582	576	1,270	49%
Hughes Brothers 9021	18,724	4,327	1,500	8%
Orland Hughes 9067	6,938	1,680	2,880	42%
Diamond A 9033	21,658	2,405	4,414	20%
Les Foster and D.D. Barker 9038	7,605	1,066	2,040	27%
Marlin Richardson 9039	19,310	3,686	10,920	56%
Jim Ballantine 9040	13,789	1,849	5,620	40%
John White 9062	11,007	1,842	2,850	25%
TOTAL			31,386	

## 2. Ranch Management

Maintenance, repair, and cleaning of dirt tanks occurs approximately every 5 years and requires the use of heavy equipment such as a bulldozer. Water hauling requires motorized access while other activities (e.g. livestock counts, fence maintenance, placing salt, and roundup) involve the use of both horses and motorized vehicles depending on the accessibility of a particular area and the magnitude of the work to be accomplished.

## D. Recreation

The BLM has little visitor use data for the Brokeoff Mountains. Approximately 100-200 deer hunters are believed to visit the area every fall (Bruce Morrison 1982). Big game hunting is the primary use in the area and associated activities include off-road vehicle use, hiking, and camping.



#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

The Brokeoff Mountains WSA generally appears to have been affected primarily by the forces of nature.

Imprints of man have their greatest impact in the northern half of the area. Although this portion of the WSA generally appears natural, its natural appearance is compromised by vehicular access routes and rangeland developments. Four miles of vehicular access routes cross this portion of the WSA. The most noticeable of these is a route which follows a ridge crest to a dirt tank and lacks both vegetative and topographic screening. Additional rangeland developments include: a white metal tank which can be seen for over a mile, a dirt tank, and 23 miles of sheep fence.

Rangeland developments south of Humphrey Canyon include three revegetated dirt tanks, an abandoned drinking trough, and 10 miles of sheep fence. These developments are topographically screened and create very little visual contrast.

##### b. Solitude

The area offers outstanding opportunities for solitude which are enhanced primarily by the WSA's size, boundary configuration, and rugged topography and, to a lesser degree, by vegetative screening, remoteness of various portions of the WSA, and designated wilderness to the south.

The WSA is fairly large and contains most of the Brokeoff Mountains Range. The WSA is approximately 12 miles long (north to south) and 2-5 miles wide. The size and rectangular shape enhances opportunities to find a secluded spot.

Nine canyons lie between the major ridges and empty to the west. These features divide into countless smaller ridges with drainages in between that provide screening and opportunities for seclusion. The western boundary of the WSA is less rugged, consisting primarily of flat to rolling terrain.

The rugged terrain and lack of vehicular access in the southern part of the WSA provide opportunities to find a secluded spot. In addition, this area is contiguous with the Guadalupe Mountains Wilderness Area which offers outstanding opportunities for solitude. The rugged terrain of the northern part of the WSA is sufficient to offer ample opportunities for solitude. However, vehicular access is greater and the topography is less challenging than in the southern part of the WSA.



### c. Primitive and Unconfined Recreation

The WSA offers outstanding opportunities for primitive and unconfined types of recreation. Hiking, backpacking, nontechnical rockclimbing, photography, and sightseeing opportunities are available in the WSA. These opportunities are based primarily on the WSA's size and topographic relief.

The WSA is blocked up so that visitors may spend several days hiking the Brokeoff Mountains. In addition, the adjacent Guadalupe Mountains Wilderness Area is managed by the National Park Service for primitive and unconfined types of recreation. The WSA is large enough to accommodate a 3-4 day trip. Longer trips may be taken by continuing into the Guadalupe Mountains Wilderness Area. Scenic vistas are present in the WSA and opportunities exist for sightseeing and photography. Deer are present and opportunities for big game hunting are available.

### 2. Special Features

The WSA contains outstanding scenic quality. Paleontological features are also present; however, these features are fairly common and are not believed to possess significant scientific or educational values. None of these features significantly contribute to the WSA's wilderness character.

### 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness and renewable resource values than would administrative designations available to the BLM.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the area as being in the Chihuahuan Desert Province with potential natural vegetation of approximately 27,206 acres of grama-tobosa shrubsteppe and 4,180 acres of Trans-Pecos shrub savanna.

#### b. Distance From Population Centers

The Brokeoff Mountains WSA is a 3 hour drive from El Paso, Texas and a 4 hour drive from Las Cruces, New Mexico.

### B. Manageability

The Brokeoff Mountains WSA is presently capable of being effectively managed to preserve its wilderness character over the long-term. In making this determination, several factors were evaluated, including: land status, existing management and access to inholdings, and management of contiguous National Park Service land.



## BROKEOFF MOUNTAINS

The WSA contains 31,386 acres of public land and 1,520 acres of State inholdings. There are also 320 acres of State land (T. 26 S., R. 20 E. Section 32) which are surrounded by the WSA on three sides and the Guadalupe Mountains Wilderness Area on the fourth. Grazing is currently the only use of these inholdings and motorized access is available along vehicle routes and arroyo bottoms. Management of these lands does not presently conflict with wilderness preservation. However, manageability of the WSA could be improved by their acquisition (particularly the 320 acres lying between the WSA and the Guadalupe Mountains Wilderness Area) since the BLM could then ensure that they continue to be managed in a manner fully compatible with wilderness preservation. This would also increase the acreage contiguous to the Guadalupe Mountains Wilderness Area. That portion of the Guadalupe Mountains National Park that is contiguous to the WSA is designated wilderness. The fact that contiguous lands are specifically managed for wilderness purposes enhances the manageability of the Brokeoff Mountains WSA. Lands that should be considered for acquisition under the All Wilderness and Amended Boundary Alternatives are legally described below.

### Legal Description

### Acres

#### Additional Lands to be Acquired Under the All Wilderness Alternative

##### State Land

T. 25 S., R. 19 E., Section 2:	All	640
Section 13:	N $\frac{1}{2}$ N $\frac{1}{2}$	160
Section 14:	N $\frac{1}{2}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ NE $\frac{1}{4}$	160
Section 15:	NE $\frac{1}{4}$ SE $\frac{1}{4}$	80
Section 16:	All	640
Section 23:	SW $\frac{1}{4}$ NE $\frac{1}{4}$	40
Section 26:	SW $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$	160
Section 36:	All	640
T. 24 S., R. 9 E., Section 32:	All	640
TOTAL		3,160

#### Lands to be Acquired Under the Amended Boundary Alternative

##### State Land

T. 26 S., R. 19 E., Section 2:	All	640
Section 36:	N $\frac{1}{2}$	320
T. 26 S., R. 20 E., Section 32:	N $\frac{1}{2}$	320
TOTAL		1,280



## V. CONSULTATION AND COORDINATION

### A. Public Involvement Overview

Public comment periods were conducted during the initial and intensive wilderness inventories in 1979 and 1980. Several comments were received in opposition to WSA status for the Brokeoff Mountains. General reasons for opposing WSA status included oil and gas exploration activity, minerals potential, and current livestock use. One comment stated that wilderness designation would rule out States' rights on State sections. These issues were not addressed during the inventory process since a WSA decision could only be based on the presence or lack of wilderness characteristics. The comments were retained and used during the preparation of this document.

During the public comment period on the Draft Environmental Assessment Wilderness Study Areas in the Las Cruces District (BLM 1983), a total of 121 inputs were received on the Brokeoff Mountains WSA.

Of the 116 inputs favoring wilderness designation, 97 were considered to be form letters. Although the form letters were not identical, it was obvious that the letters consisted of nearly identical sentences and paragraphs that had been arranged in a different order.

Comments regarding the Brokeoff Mountains wilderness values were generally broad statements such as "wilderness characteristics are unquestioned and a variety of wild animals utilize the many different habitat types" and "offers outstanding opportunities for solitude and primitive recreation."

Numerous comments supported wilderness designation because the WSA is next to the Guadalupe Mountains National Park or because the National Park Service (NPS) supports wilderness designation.

Comments on the oil and gas conflicts in the area by those favoring wilderness designation stated that oil and gas potential was theoretical, not actual, or that oil and gas development could occur elsewhere.

The NPS comments on the Brokeoff Mountains WSA provided both specific resource comments and disagreement with BLM's recommended action. The majority of the disagreements were based on the potential impacts of the recommended action to the National Park. The NPS specifically discussed the impacts of oil and gas development on the aesthetic qualities of the National Park, the increase of interaction between domestic animals with the Park ecology, and the desire to enhance the protection of the National Park from the impact of oil and gas development.

Comments opposing wilderness designation for the WSA discussed the area's oil and gas potential or the lack of wilderness potential for the area.



## BROKEOFF MOUNTAINS

### B. Summary of Scoping

The Summary of Scoping table lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District's Environmental Assessments (EAs). However, unless otherwise discussed in the table, issues related to water, soils, vegetation, wildlife, visual, cultural, air, recreation, and education/research are not analyzed in this WAR because these resources were considered in the District's Final EAs and little or no environmental impacts were identified.

#### SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Expanding the WSA	This was not considered further because it would require consideration of lands not designated for wilderness study and lands not protected by the BLM Interim Management Policy. However, there were cases considered where expanding the boundary would be required for management purposes and, in the case of the Brokeoff Mountains, this was addressed for acquisition of inholdings.
An Alternative that Includes a Different Amended Boundary	The Amended Boundary developed by BLM adequately balanced the resource conflicts and wilderness values.

Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Minerals	Although impacts to oil and gas exploration and development were identified in the Las Cruces District EA and WAR as a significant issue, further evaluation shows that there would be no significant impacts to this resource because oil and gas potential is low.
Livestock Grazing	No significant impacts to livestock grazing were identified; however, this issue will be discussed because of Statewide interest.
Proximity to the Guadalupe Mountains National Park	The purpose of the BLM's wilderness review process is to identify public land suitable for preservation as wilderness. Wilderness review is not intended to be used to ensure protection of existing wilderness nor to enhance the values of the other lands.

Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	Required by the BLM Wilderness Study Policy.
Amended Boundary	This boundary adjustment was evaluated to balance resource conflicts and wilderness values.
No Action/No Wilderness (Proposed Action)	Required by the BLM Wilderness Study Policy.

#### Issues Selected for Detailed Analysis

The primary issue for the Brokeoff Mountains WSA is the quality of the area's wilderness values.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 31,386 acres of public land within the Brokeoff Mountains WSA would be recommended suitable for wilderness designation. (See Map 35-1 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (WMP) (BLM 1981).

#### 1. Impacts to Wilderness Values

Wilderness designation would benefit the Brokeoff Mountains WSA's existing wilderness values by providing them with long-term Congressional protection. The area would be managed to retain its natural appearance, outstanding opportunities for solitude and primitive and unconfined recreation, and scenic quality.

#### 2. Impacts to Livestock Grazing

Current levels of authorized livestock grazing use would continue. Generally, motorized access on the four miles of existing vehicle trails in the area would not be permitted. Permits would be required for motorized access to maintain a dirt tank. These vehicle restrictions could result in inconveniences to livestock management.

### B. Amended Boundary

Under this alternative, 12,277 acres of public land within the southern part of the Brokeoff Mountains WSA would be recommended suitable for wilderness designation. A total of 19,109 acres in the northern part of the WSA would be recommended nonsuitable for wilderness designation.

#### 1. Impacts to Wilderness Values

Wilderness designation would benefit the wilderness values of the southern part of the WSA by providing them with long-term Congressional protection. This part of the WSA is more natural than the northern area and opportunities for solitude and primitive recreation are enhanced by the contiguous designated wilderness in Guadalupe Mountains National Park. An area of 12,277 acres with the highest quality wilderness values, would retain its existing natural appearance, outstanding opportunities for solitude, hiking, backpacking, nontechnical rockclimbing, photography, and sightseeing.

#### 2. Impacts to Livestock Grazing

Current levels of authorized grazing use would continue. There are no existing vehicle trails in the southern part of the WSA, so



## BROKEOFF MOUNTAINS

there would be no restrictions on existing vehicular use. There would be no significant impacts to livestock grazing.

### C. No Action/No Wilderness (Proposed Action)

Under this alternative, the entire 31,386 acres of public land within the Brokeoff Mountains WSA would be recommended nonsuitable for wilderness designation.

#### 1. Impacts to Wilderness Values

Under this alternative, the existing wilderness values in the Brokeoff Mountains WSA would not receive long-term Congressional protection. Since there are no planned or anticipated actions in existing BLM plans that would degrade wilderness values, wilderness values would probably be retained in the short-term. However, management of the area would be subject to administrative change in the long-term. Future uses such as oil and gas exploration and drilling and construction of additional rangeland developments or access routes could be surface disturbing and impairment of wilderness values could occur.

#### 2. Impacts to Livestock Grazing

There would be no impacts to livestock grazing.





# **ROSWELL DISTRICT**

## **Wilderness Analysis Report**







Little Black Peak (LBP)/Carrizozo Lava Flow (CLF)

This report was prepared to describe the resources, human uses and resource conflicts that were analyzed by the Bureau of Land Management (BLM) in order to develop management recommendations for two Wilderness Study Areas (WSAs). The two WSAs were previously identified during BLM's wilderness inventory process as Little Black Peak WSA and Carrizozo Lava Flow WSA. Normally, a single report is prepared for each WSA - however, due to the similarities and common boundary of these two areas a combined report was prepared to minimize repetitive narratives. Any differences between the WSAs are described in subsequent sections of this report. If no distinction between areas is made in a narrative it can be assumed to apply to both WSAs.

I. GENERAL DESCRIPTIONA. Location

Little Black Peak and Carrizozo Lava Flow WSAs are located in the northeast arm of the Tularosa Basin near the western border of Lincoln County, New Mexico. These WSAs are administered by the Roswell Resource Area of Roswell District, Bureau of Land Management.

The WSAs consist of about the northern third of the Carrizozo "Malpais" (a Spanish word meaning "badlands") - an extensive lava flow on the valley floor west of Carrizozo, New Mexico. This lava flow originated from fissures near Little Black Peak cinder cone, a prominent geographic feature for which the northern WSA was named.



LITTLE BLACK PEAK, AN 85-FOOT HIGH CINDER CONE, MARKS THE SPOT WHERE THE CARRIZOZO MALPAIS ORIGINATED.



South of U.S. Highway 380, which forms a common boundary between the study areas, the Carrizozo Lava Flow WSA extends southwesterly for about 7 miles. The total length of the lava flow is about 44 miles of which 14 miles are under consideration for potential wilderness designation. The WSAs are located on three 15 minute series topographic maps published by the U.S. Geological Survey; Carrizozo, Chihuahua Ranch and Little Black Peak. WSA boundaries and their approximate location in southcentral New Mexico are shown on the map included at the end of this chapter.

## B. Climate and Topography

### Climate

The portions of the Carrizozo Malpais that are being evaluated for wilderness suitability are influenced by a considerable variation in precipitation. The northern end of the flow receives about 14 inches of precipitation contrasted with about 11 inches at the south end. The decline in precipitation is gradual within the 14 mile horizontal distance of both WSAs. This difference in precipitation between the northern and southern ends of the WSAs is believed to be due to a 700 foot reduction in elevation, and due to the "rain shadow" effect of the nearby Oscura Uplift which blocks the movement of moisture laden clouds to the southern part of the WSAs.

The arid climate of the WSAs is characterized by a hot summer season (90 to 95 degrees F. in July) during which most of the annual precipitation is received as rainfall. The average growing season is 190 days and prevailing winds are from the west or southwest. Winter temperatures are moderate with an average minimum temperature of 24° F. in January.

### Topography

Elevations within the WSAs range from 5676 feet at Little Black Peak near the northern end of the lava flow to about 4000 feet at the southern boundary of the Carrizozo Lava Flow WSA. Topography and land form of the lava flow was strongly influenced by the southerly trending gradient of the valley floor. The flow appears to be relatively level when viewed from a distance. However, the surface of the flow is extremely rough and broken due to the presence of fractures, collapsed lava tubes and pressure ridges. There are no major water drainages within the lava flow since external water courses either disappear under or flow along the lava's edge for short distances. A low range of limestone hills are located on the western edge of the Carrizozo WSA.

## C. Land Status

Based on acreage calculations derived from Bureau land status records, Little Black Peak WSA contains 15,072 acres under federal



surface and subsurface ownership. There is one non-federally owned inholding of 640 acres of New Mexico state trust land (surface and subsurface) located inside the WSA boundary.

Carrizozo Lava Flow WSA contains 10,240 acres, surface and subsurface federal ownership. There are no inholdings within this area since the WSA boundary conforms with property lines and manmade intrusions located on federal lands.

The boundary lines and land status for both WSAs are depicted on Map I-1 at the end of this chapter. WSA boundaries were established during the inventory phase of BLM's wilderness review program which was completed in November 1980. WSA acreages used in this report are more precise than previous computations, and therefore are different than previously published acreage figures.

#### D. Access

Both WSAs are physically and legally accessible by overland foot travel from U.S. 380 along their common boundary. Permanent legal access for vehicles is not available from other locations since there are no public roads that enter the WSA. However, temporary legal access from Lincoln County Road D002 is available across state land (Section 2, T. 6 S., R. 9 E.) at the northwest end of Little Black Peak WSA. This legal access is temporary in that it is available only during established hunting seasons for protected game animals, and access rights are restricted to licensed hunters. Physical access to the WSAs across adjoining non-federal lands may be available at the discretion of adjoining land owners.

#### E. Proposed Action, Alternatives and Issues

Table I-1 describes actions associated with the proposed action and alternatives for the WSAs.

Table I-2 summarizes the significant environmental impacts by alternative for each of the major environmental issues.



TABLE I-1

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

All Wilderness	Amended Boundary (Proposed Action)	No Wilderness
o Manage 25,312 acres as wilderness	o Manage 24,249 acres as wilderness	o Manage 25,312 acres without wilderness protection.
- Close 4 miles of vehicle ways.	- Close 0.2 miles of vehicle ways.	- Vehicle use would be allowed to continue on all ways.
- 25,312 acres would be closed to future oil and gas leasing and mineral entry.	- 24,249 acres would be closed to future oil and gas leasing and mineral entry.	- 25,312 acres would be open to future oil and gas leasing and mineral entry.
- Attempts would be made to acquire about 9,800 acres of state and private lands within and adjacent to the WSAs.	- Attempts would be made to acquire about 9,800 acres of state and private lands within and adjacent to the WSAs.	- No special emphasis would be made to acquire state and private lands.
- Current grazing levels would continue.	- Current grazing levels would continue.	- Current grazing levels would continue.
- Expansion of U.S. Highway 380 would not be allowed.	- Expansion of U.S. Highway 380 would be allowed.	- Expansion of U.S. Highway 380 would be allowed.
	o Manage 1,063 acres without wilderness protection.	
	- Vehicle use would be allowed to continue on 3.8 miles of ways.	
	- 1,063 acres would be open to future oil and gas leasing and mineral entry.	
	- Current grazing levels would continue.	



TABLE I-2

SUMMARY OF SIGNIFICANT IMPACTS  
LITTLE BLACK PEAK/CARRIZOZO LAVA FLOW

Alternatives by WSAs/Acreage	MAJOR ENVIRONMENT ISSUES	
	Impacts to Highway Expansion	Impacts to Wilderness Values
All Wilderness (25,312 acres)	Expansion of U. S. Highway 380 would not be allowed and the safety of highway users could be affected if traffic volume increases.	Wilderness values would be maintained on 25,312 acres.
Amended Boundary (24,249 acres recommended suitable and 1,063 acres recommended unsuitable.)	No significant impacts.	Wilderness values would be maintained on 24,249 acres.
No Wilderness (25,312 acres)	No significant impacts.	Wilderness values would be lost or impaired in limited areas along the lava flow periphery and other areas where surface disturbance occurs (rugged terrain would prevent impacts in most of the WSAs).



# MAP I-1

## Little Black Peak (060-109) and Carrizozo Lava Flow (060-110A-1) WSA s

### Legend

— WSA BOUNDARY

- - - AMENDED BOUNDARY/PROPOSED ACTION  
(darker areas excluded)

### Land Status\*

■ BLM

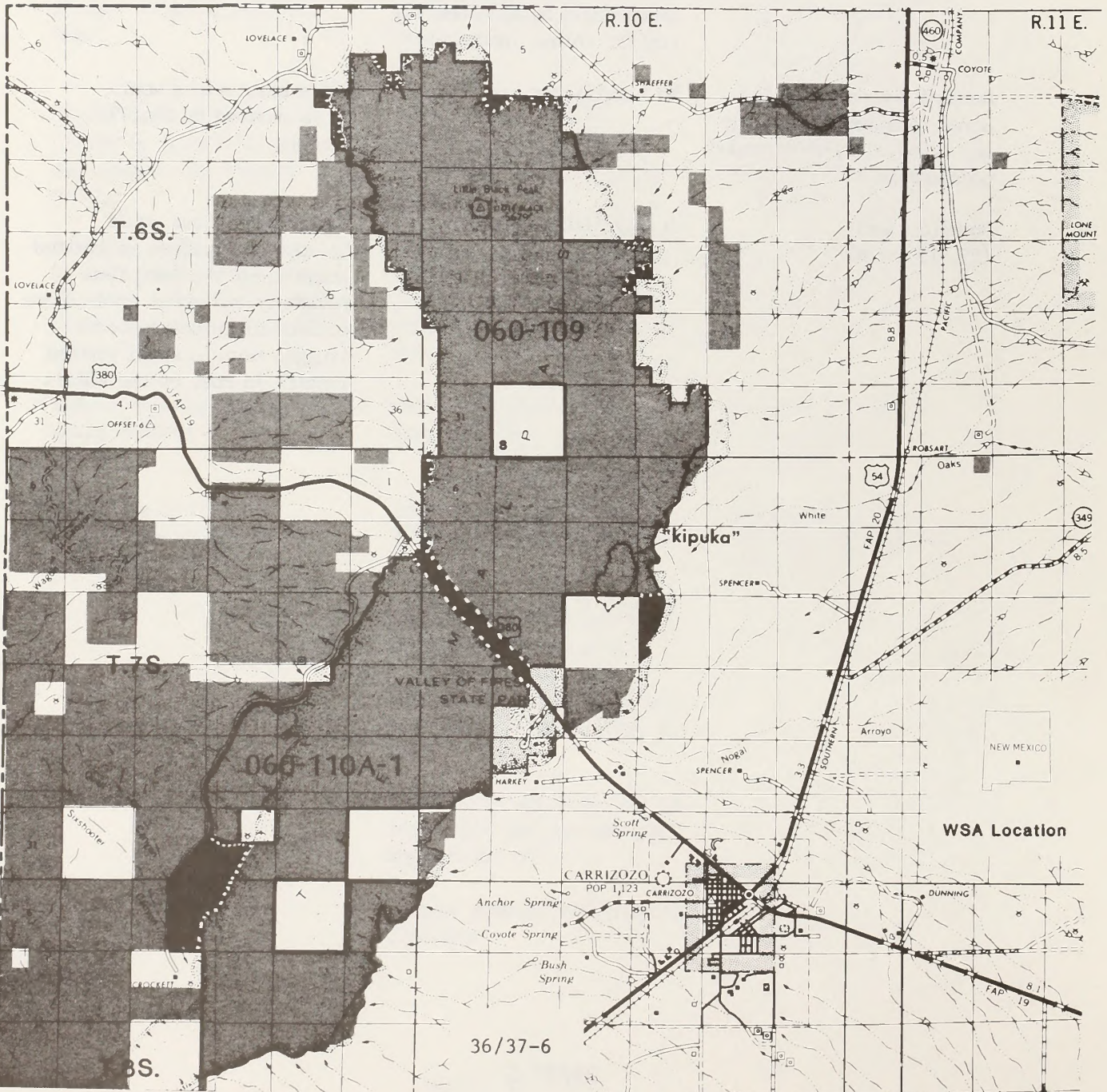
□ PRIVATE (NONE)

□ STATE

Scale: 1/2 Inch=1 mile

\* Non-BLM ownership is identified only inside the WSA s boundary.

Source: USDI BLM, Roswell District, 1982



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## II. EXISTING RESOURCES

### A. Geology

The Carrizozo Malpais is believed to be one of the youngest lava flows in the continental United States and is estimated to be less than 1500 years old. This young age is indicated by the flow's fresh and uneroded appearance. The lava flow in the WSAs was formed during two different volcanic episodes and both layers of lava can be detected in the area north of Little Black Peak and at a deep sinkhole in the southern WSA (Section 24, T. 7 S., R. 9 E.).



THIS 20 ACRE DEPRESSION IN THE CARRIZOZO LAVA FLOW WSA  
CONTAINS A DEEP SINKHOLE THAT CUTS THROUGH 160 FEET OF  
LAVA INTO THE UNDERLYING VALLEY FLOOR.

According to available information (Renault 1970), the majority of the upper and most recent lava flow is included within the WSAs. The age of the Upper Carrizozo flow has not been established through any reliable method such as potassium-argon dating and age estimates are based on the fresh appearance of volcanic features.



The flow exhibits all the features commonly associated with recent flows of basaltic composition, such as flow units, pressure ridges, collapsed lava tunnels and "kipukas" (a Hawaiian term for older rocks surrounded as islands by lava). The upper surface of the flow is highly porous due to gas bubbles that escaped during the last stages of cooling. In places it is sufficiently spongelike in texture to be termed scoria. Of the two contrasting surface textures which develop on flows, the surface of this flow is commonly known by its traditional Hawaiian term "pahoehoe" (or ropy) which has a twisted and convoluted surface.



PAHOEHOE, A ROPY TEXTURED FORM OF LAVA, IS A COMMON FEATURE OF THE CARRIZO MALPAIS IN BOTH WSA<sub>s</sub>.





The recent Pliocene age lava flow overlays older sedimentary rocks of the Permian age Yeso, San Andres, and Artesia Formations; Triassic age Chinle Formation ; and the Cretaceous age Dakota Sandstone and Mancos Shale Formations. All of the sedimentary formations have been tilted and appear at greater depths to the southeast. A small deposit of intrusive rock (molten rock that cooled below the surface) is exposed on the crest of the largest kipuka located at the southeast corner of Little Black Peak WSA.

#### B. Water

There are no perennial water sources in the WSAs and surface water is only available for short periods following a heavy rainfall or sudden snow melt. When surface runoff does occur the water flows from the surrounding areas into the lava and infiltrates into the ground. Surface precipitation within the lava flow either evaporates or travels a short distance and infiltrates.

Ground water in the area adjacent to the lava flow occurs from approximately 90 to over 500 feet in depth. Due to high salinity the water quality is marginal for human consumption, but it is suitable for livestock and wildlife. Total dissolved solids in the ground water range from 1,000 to 3,000 mg/L.

Water usage in the WSAs is low and most consumption is made by livestock and wildlife from available surface water.

#### C. Soils

Six soil map units occur in the WSAs as mapped in the Lincoln County Area soil survey report. The majority of the area is shown as a lava flow map unit, which by definition is not considered a soil but is a land type describing the rocky lava flows. Some wind and water borne soil has been deposited in cracks and crevices in the lava which supports vegetative growth. Water and wind erosion hazards in the lava flow map unit are negligible.

The other five soil map units occur along the boundary of the lava flow and include the following soil series; Rance, Tanbark, Tortugas Andergeorge, Darvey, Asparas, Harvey and Gabaldon. These soils are not extensive within the WSAs because the boundary closely follows the edge of the lava flow. Rance and Tanbark soils have a high wind erosion potential. Tortugas soil has a high water erosion hazard and a slight wind erosion potential. Andergeorge, Darvey, Asparas, Harvey and Gabaldon soils have a moderate water erosion hazard and a high wind erosion potential.



D. Vegetation - Threatened or Endangered Plant Species

In comparison to surrounding areas the Carrizozo Malpais supports a remarkably diverse and luxuriant flora, 114 species exclusive of grasses compared to 51 species on the surrounding areas (Shields 1956).



ALTHOUGH THE CARRIZOZO MALPAIS IS BELIEVED TO BE A VERY RECENT VOLCANIC AREA, A DIVERSE COMMUNITY OF DESERT SHRUBS AND GRASSES HAS BECOME ESTABLISHED.

Both WSAs are within the Upper Sonoran Life Zone. Vegetation composition is primarily affected by a north-south elevation and precipitation gradient, with the north end being higher and wetter and, as a result, supporting a larger and denser tree and shrub community. Habitat type and aspect also influence vegetation composition within the lava flow.

No federal threatened or endangered plant species are known to occur in the area, as indicated by the U.S. Fish and Wildlife Service. One state plant of special concern (Rock Spleenwort Asplenium resiliens) is found within the Malpais. Habitat for this fern appears to be restricted to moist sinkholes.



Vegetative characteristics of the WSAs are summarized in the following table which indicates Standard Habitat Site classifications. Standard Habitat Sites (SHS) generally apply to broad areas with delineations based on similarities of vegetation and land form. This classification system is used for wildlife habitat management purposes.

<u>Standard Habitat Site (SHS)</u>	<u>Approximate % Composition of WSAs</u>
Juniper-Mixed Shrub/Malpais	55
Mixed Shrub/Malpais	39
Grass-Mixed Shrub/Limestone Hills	6

Most of the Juniper-Mixed Shrub SHS is found in the northern WSA, starting about 1-1/2 miles north of U.S. 380. This SHS is indicated by the presence of a sparse overstory of one-seed juniper. The Mixed Shrub SHS occurs in both WSAs, but the majority of this site is within the southern WSA. The Grass-Mixed Shrub SHS borders the lower western side of the lava flow in the southern WSA.

#### E. Wildlife and Threatened or Endangered Species

Human visitation into the central portion of the WSAs is largely curtailed by the forbidding nature of the terrain, thus providing a haven for game animals. The difficulties presented in extracting killed game from the flow interior limits most hunters and trappers to hunting within a short distance from the perimeter. Repeated aerial reconnaissance flights have consistently shown that the predominance of big game sightings are within a quarter to a half mile from the periphery. This fact, when considered with the abundance of available browse, makes it apparent that the absence of water within the confines of the flow is probably the main limiting factor in game distribution.

The lava flow supports a sizeable herd of mule deer yearlong. In addition, a small band of barbary sheep has been observed during three seasons (summer, fall and winter) indicating yearlong residency. Predator species inhabiting or regularly visiting the flow include coyotes, kit foxes, gray foxes, bobcats, and ringtail cats. Historical sightings of mountain lions either passing through or staying for a time have been recorded. Also, reportedly, a black bear inhabited the flow until it was removed by hunters.

The diversity of bird species in the lava flow is high when compared to the adjacent grass uplands and limestone hills. Several woodland and scrubland birds inhabit the area yearlong or seasonally.



Included in this list are vireos, warblers, jays, sparrows, and shrikes. Turkey vultures along with great horned owls concentrate in the flow for breeding and nesting. During the winter months, both golden and bald eagles can be seen hunting over the lava or resting within. Heavy use by raptors (birds of prey) is evidenced by the sightings of numerous whitewashed crags and ledges visible from the air.

An unusual characteristic exhibited by some of the smaller animals inhabiting the lava flow is that they have developed a melanistic, or darker, fur or skin coloration than is typical for their species. This coloration is believed to be an effective protective mechanism that camouflages animals residing within the dark colored lava flow. The presence of melanistic animals was noted by biologists as early as 1927 and several new rodent subspecies were first collected in this lava flow during the 1930's. Additional details about research activities appear in Chapter III.E. of this report. There are twelve animal species - six rodents, five lizards and one snake - residing within the WSA that have developed melanistic races. Individuals within these races exhibit a high degree of variability in melanistic character ranging from near normal to very dark coloration. The white-throated wood rat is unique in that it has developed melanistic races in this area; melanistic races of this particular species are not known to occur on other lava flows in New Mexico.

The bald eagle, a Federally listed endangered species, has been observed near the periphery of the flow. The black hawk, listed as a State endangered (Group II) species, may occasionally occur in the vicinity of the flow although no sightings have been recorded. No delineations of crucial habitat in the WSAs for threatened or endangered wildlife species have been made by the U.S. Fish and Wildlife Service.

#### F. Visual Resources

Visual quality of the WSAs has been evaluated in accordance with BLM's Visual Resource Management (VRM) system, which is described in the Bureau's 8400 manual series. This two part system includes both the inventory of existing scenic qualities and the assignment of management goals that are needed to minimize visual impacts.

The Carrizozo Lava Flow, which includes both WSAs, was rated as high scenic quality when compared with other land areas in this physiographic region. Also, since this rating area is visible from a major travel route, user sensitivity to visual modifications was rated as high. The striking color contrast between black lava rock and the brown to gray surrounding landscape is the most important factor contributing to the high scenic value of this area. Inventory findings indicated the lava flow portion of the WSAs should be managed in accordance with VRM Class II goals. Portions of the WSAs outside the lava flow have lower scenic quality and management in accordance with less stringent VRM Class III goals is indicated.



### G. Cultural Resources

The perimeter of the flow in both WSAs is characterized by grassy fingers or inlets which extend into the flow body. On a seasonal basis, water may be available along the edges in catchments and intermittent playas; however, no permanent springs, seeps, or other waters have been located within the WSA boundaries. The lack of permanent waters along with the ruggedness of the terrain may have prevented extensive human habitation other than occasional visits. Flakes, scrapers, broken points, and various tools were located along the periphery although such findings were infrequent and scarce. Caves, ledges, and protective overhangs examined for evidence of use uncovered no artifacts; however, local residents have indicated extensive pothunting occurred in past years.

Prior to the construction of Highway 380 which bisects the WSAs, the northern edge of the flow was utilized as a rest stop along the old stagecoach route. According to local residents, a well (probably a deep catchment) existed within the interior of the northern edge and was used to draw and haul water to the stage horses. The ruins of at least four abandoned homesteads or line shacks are located in the malpais, generally within a few hundred feet of the edge. Constructed of lava rock foundations, the ruins are in varying stages of deterioration. Roofing materials include both lumber and tin with nearby corrals constructed of posts and wire or lava rock walls. Associated dumps indicate the age of the ruins to vary from the late 1880's through the mid 1930's.

### H. Air

No air quality data is available for this area. However, the air quality is considered to be good since there are no major sources of air pollution in the area. During windy periods, especially in the spring, there is a significant amount of wind-borne dust and soil in the air.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Resources

The primary source for mineral information used in this study report is from a document entitled "Geology, Energy and Mineral Resources Assessment in the Carrizozo Area, New Mexico". This document, referred to in abbreviated form as the GEM assessment, was contracted by BLM to supplement available information about mineral potentials in the WSAs. The GEM assessment may be inspected at the Roswell Resource Area BLM Office.

The GEM assessment indicated that, based on an analysis of existing information, there is no known mineral deposit or potential mineral occurrence in the WSAs that has more than a low favorability rating for development. Favorability ratings were based on an evaluation of the geologic environment, inferred geological processes and economic or technological constraints to resource development. The following mineral commodities were classified according to potential for development:

TABLE III-1  
Mineral Potential of Carrizozo Lava Flow/Little Black Peak WSAs

<u>COMMODITY</u>	<u>ASSOCIATED ENVIRONMENT</u>	<u>MINERAL POTENTIAL</u>	<u>ACREAGE</u>
Oil and Gas	Paleozoic rocks	Low	*
Salt and Gypsum	Pemian evaporites	Low	*
Geothermal	Quaternary basalt	Low	*
Replacement deposits of iron	Limestones and Gypsum intruded by tertiary igneous rocks	Low	*
Stratabound copper	Redbeds in Yeso Fm.	Low	*
Hydrothermal and porphyry copper/ molybdenum	Tertiary intrusives within Paleozoic rocks	Low	*
Uranium and thorium	Paleozoic limestones and Dakota sandstone	Low	*
Hydrothermal barite and fluorite	Structurally controlled hydrothermal deposits	Low	*

\*Acreage on areas of low potential were not calculated.



Leasable Minerals

Several sources of information were considered in order to determine the potential for development of oil and gas resources. The WSAs were classified as prospectively valuable for oil and gas by the U.S. Minerals Management Service (MMS). An industry source, Atlantic Richfield Company, rated the northern WSA as having high intermediate favorability and the southern WSA as low intermediate favorability for oil and gas resources. Both WSAs have been rated as having low favorability in the GEM assessment based on indirect evidence. One well drilled on the western edge of Little Black Peak WSA encountered a show of oil in the San Andres Formation. Three exploration wells were located about one mile east of the lava flow and two are known to have shows of oil and gas. Two wells have been drilled several miles west of the lava flow - one well had a show of oil and gas while the other well was a dry hole. As of April 1982, 80% of federal oil and gas acreage in the WSAs had either been leased or applications were pending. The interest in leasing and the number of wells that contained shows of oil or gas seemed to indicate that this portion of the Tularosa Basin had a potential for hydrocarbon resources. However, based upon current leasing records (Dec. 1984) about 18% of the total WSAs' acreage is covered by parts of 11 leases. Approximately 15% of the northern WSA and 22% of the southern WSA is under lease. This decline in leasing interest appears to indicate a reduced interest in exploration for potential hydrocarbon resources. Whether or not there are any economic reserves of hydrocarbons underlying the WSAs is a question that can only be confirmed or denied through additional exploration. Location of mineral leases is shown on Map III-1.

All leases for federal minerals within the WSAs were processed after passage of the Federal Land Policy and Management Act (FLPMA) and lease operations are subject to regulation to protect wilderness values. A wilderness protection stipulation on these post-FLPMA leases seriously constrains potential exploration activities in rocky areas since allowable activities must be temporary and must be reclaimed to a substantially unnoticeable condition.

There is a low potential for other lower value leasable mineral resources in the WSAs, based upon indirect evidence. Salt is known to occur in the Yesso Formation. This formation is exposed in the southern WSA and a thick salt sequence was encountered in a nearby oil exploration hole. Potential development of this resource, if it is confirmed to exist in the southern WSA, would be limited since the reserves are probably covered by considerable amounts of overburden. Geothermal potential has been rated as low favorability based on indirect evidence - the presence of recent basalts. The MMS did not classify geothermal potential for the WSAs, nor have there been any leases or applications.



Locatable Minerals

Currently, there are no exploration or development activities for locatable minerals taking place in the WSAs. Twenty-two recent mining claims within the northern WSA on the large kipuka in Sections 9 and 10, T. 7 S., R. 10 E. were relinquished by the claimant on February 21, 1985. During the summer of 1980 several exploratory holes were drilled on the claims but no information is available from these tests. Uranium claims had been located on the kipuka in the mid-1950's but have since been abandoned.

Due to the presence of an exposure of intrusive rocks in the northern WSA (the eastern part of the kipuka in Section 9 and 10, T. 7 S., R. 10 E.), this location has been rated as having a low potential for the accumulation of; hydrothermal gold, silver, copper, lead, porphyry molybdenum-copper and uranium. According to available information, the recent mining claims at this site were targeted for both copper and uranium. There is a low potential for stratabound copper-silver deposits in the Yeso Formation along the southwestern margin of the southern WSA. Uranium deposits in San Andres limestone along the western border of the lava flow and at the Tertiary intrusive are a low potential in both WSAs. There is a low potential for replacement deposits of iron to occur in both WSAs where sedimentary rocks have been intruded by igneous rocks. Magnetite has been found in similar situations in areas several miles north of the WSAs.

There is low favorability for the occurrence of hydrothermal fluorite and barite associated with the small Tertiary intrusive in the northern WSA. Gypsum is present in the Permian Yeso and San Andres Formations and subsurface deposits are known to occur on the western margin of both WSAs. Gypsum was mined from the San Andres Formation in the Jicarilla Mountains northeast of Little Black Peak WSA in the early 1900's, but production in the Jicarilla area ceased due to unfavorable economic conditions.



# MINING CLAIMS / MINERAL LEASES MAP III-1

## Little Black Peak (060-109) and Carrizozo Lava Flow (060-110A-1) WSA's

POST-FLPMA Oil and Gas Leases (SOURCE: ALMRS Case Management Audit Reports dated 11/5, 11/6, 11/15, and 12/4/1984)

### Legend

— WSA BOUNDARY

- - - AMENDED BOUNDARY / PROPOSED ACTION  
(darker areas excluded)

### Land Status\*

BLM

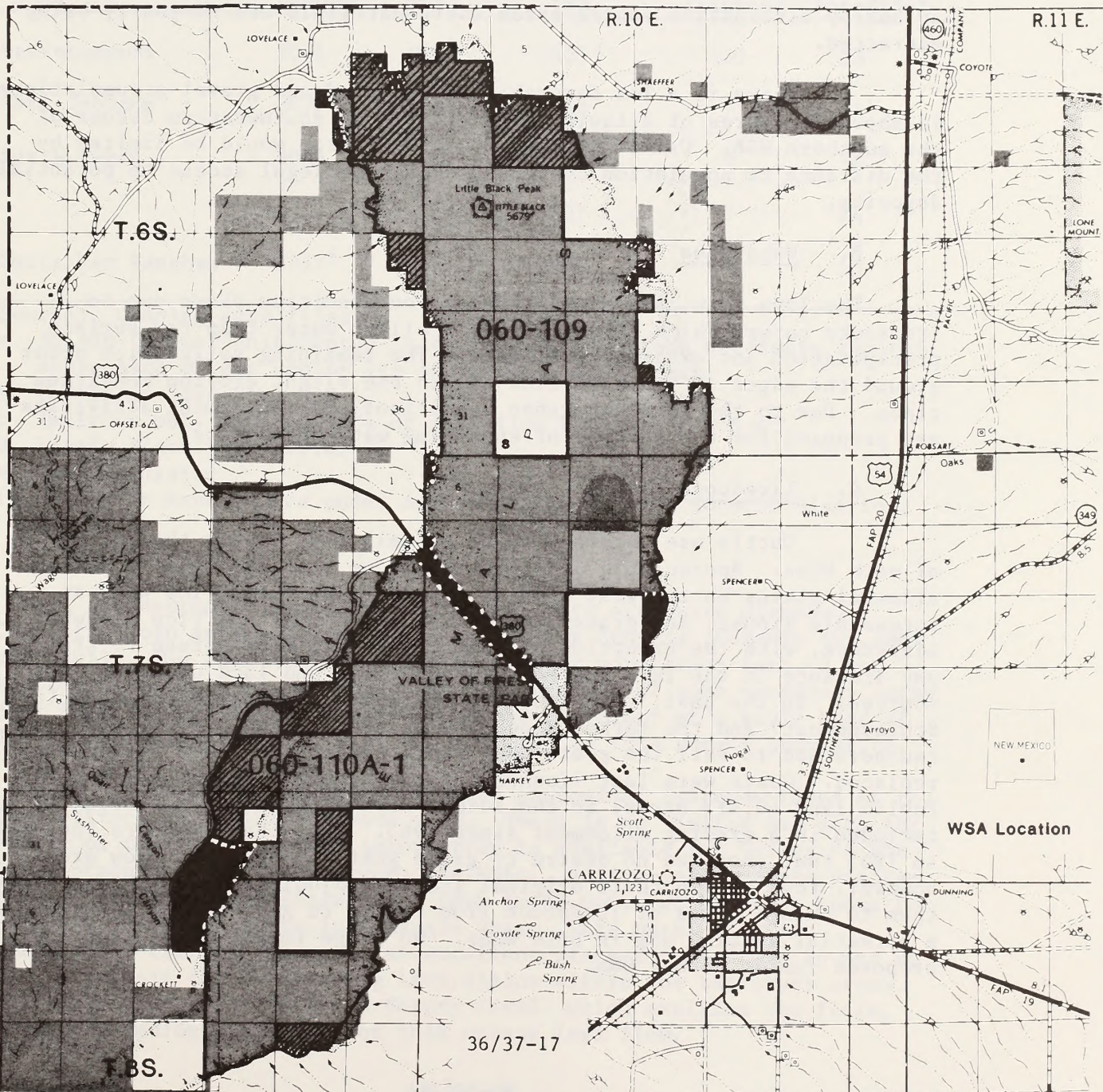
P PRIVATE (NONE)

S STATE

Scale: 1/2 inch = 1 mile

\* Non-BLM ownership is identified only  
inside the WSA's boundary.

Source: USDI BLM, Roswell District, 1982





### Salable Minerals

There currently are no active material sales within the WSAs, but scoria was sold from 1964 to 1972 at a location on the east side of Carrizozo Lava Flow WSA (Section 31, T. 7 S., R. 10 E.). This extraction site was excluded from the WSA boundary due to the substantially noticeable nature of the intrusion.

Scoria, basalt, sandstone and limestone from the WSAs could potentially be sold for landscaping and building material use, dependent upon local public demand or the availability of external market areas. This potential use is reduced by the availability of adequate supplies at nearby alternative source areas where materials are currently being extracted.

There is a low favorability for sand and gravel accumulations in about 300 acres of alluvial deposits in the southwestern corner of the southern WSA. Use of this potential resource would be limited by the distance to population centers and lack of legal access to potential deposits.

### B. Watershed

The lava flow is in a stable erosion condition class due to its rocky nature which serves as an excellent water trap for surface precipitation and external drainages. The remaining soils which occur around the edges of the lava flow are in the slight erosion condition class. Due to the good watershed conditions, no management activities are proposed for the purpose of enhancing water resources.

### C. Livestock Grazing

Cattle use occurs only on a small area within the boundaries of both WSAs. Appreciable use occurs only on the limestone hills and alluvial plains on the west side of the Carrizozo Lava Flow WSA, an accessible kipuka, and grassy inlets bordering the lava flow elsewhere. Livestock, with the exception of goats, are unable or refuse to travel any distance in the lava due to rugged terrain and lack of water sources. In the past, two livestock operators, the Crockett Ranch (now Schrecengost) and the Harkey Ranch grazed goats in the lava. Both ranchers had to sell the goats when their herders quit and couldn't be replaced. Goats were last licensed on the Crockett Ranch in 1964. Public land (6,415 acres) in the former Harkey Ranch has not been included in a grazing allotment since 1965. All other ranchers indicated in 1965 that they had no desire to graze goats in the lava flow area, however, they retain their original grazing adjudication which may allow them to change class of livestock from cattle to goats. This constitutes a potential grazing use in both WSAs. No range improvements have been proposed inside either WSA.



Decisions on livestock grazing methods, class of livestock and carrying capacities are not within the scope of this study document since these matters are normally decided as part of the land use planning process.

Information concerning existing and potential livestock grazing appears on the following Table III-2.

TABLE III-2: LIVESTOCK GRAZING IN THE CARRIZOZO LAVA FLOW AND LITTLE BLACK PEAK WSAs

Name	Allot. Number	WSA	Acres in WSA	AUM's <sup>a</sup> in WSA	
				Existing	Potential
Schrecengost	3076	CLF <sup>b</sup>	1429 <sup>c</sup>	230	65
Carl Johnson	3077	LBP <sup>d</sup>	4412	e	71
Bar W Ranch	3080	LBP	2398	e	36
		CLF	1207	e	24
Gallacher Ranches	0367 <sup>f</sup>	LBP	3290	e	45

Source: Grazing case files.

a. An AUM (Animal Unit Month) is the amount of forage necessary for the sustenance of one cow or its equivalent for 1 month.

b. Carrizozo Lava Flow W.S.A.

c. Includes only land outside of lava flow but within W.S.A.

d. Little Black Peak W.S.A.

e. Not calculated

f. Gallacher Ranches are under administration of BLM Socorro District.

#### D. Recreation

Recreation resources in these units are quite diverse. Currently both areas are receiving increasing hunting pressure for deer and quail. The flow contains a moderate deer population (est. 3 per section); the area is popular because of stories of some extremely large deer being taken in the flow. The recent discovery of a small herd of Barbary sheep in the flow will probably add to this area's popularity.

The unique plant, animal and geological features found at the flow attract many visitors each year. There is no visitor use data for either of the two WSAs, but information is available for Valley of the Fires State Park located between the WSAs. A five-year average visitation at Valley of the Fires State Park is 48,000, but has been known to reach over 75,000 visits in a single year. This park, with its campground, toilets, etc., is an excellent place for visitors to set up camp and visit the surrounding lava fields within the two study areas. This park also has a "Malpais Nature Trail" which explains the flora, fauna and geologic features of this unique lava flow.



Other recreational uses in the lava flow are hiking, bird watching, nature study and spelunking. Hikers and weekend naturalists find the lava field interesting because of the availability of diverse plant and animal communities, visual attractiveness and challenging terrain with sinkholes and caves. The majority of the visitors park along Highway 380 and walk into the study areas.

The potential use of this area has never been realized primarily because of a lack of adequate access, limited parking space next to Highway 380 and widespread lack of knowledge of the area by the public. Rights-of-way for the public on private roads could provide better recreation access. Future plans for Highway 380 involve enlarging the roadway. Construction on this highway would present the opportunity to construct more pullouts and increase recreational use. Valley of the Fires State Park is helping to make the public aware of the flow and its recreation potential.

#### E. Education/Research

The Carrizozo Malpais has been an important locale for scientific study by biologists, botanists and geologists since the late 1920's and some research activities are taking place at the present time.

Early biological explorers first described flora and fauna of the lava flow in connection with more extensive surveys in the Tularosa Basin. The reported presence of melanistic (dark colored) races of small animals sparked the interest of other researchers in this particular lava flow. Scientists on an expedition sponsored by the University of Michigan in 1927 reported the discovery of a very light-colored pocket mouse at White Sands and a dark-colored pocket mouse in the nearby lava beds (Dice 1930). The relationship between animal and habitat coloration was believed to be the result of isolation and natural selection, but no conclusive evidence was obtained to confirm or deny this theory (Benson 1933). L. M. Shields (1956; 1957) described vegetation of the lava flow and conducted studies concerning the role of lichens and algae in nitrogen formation in volcanic soils. Dr. S. E. Reichert of the University of Tennessee is conducting a behavioral and energetics study on a species of spider that inhabits the flow (Personal Communication 1982). Geologists have analyzed the mineral composition of the lava and studied flow formation processes.

Geological guidebooks with descriptions of the lava flow are available to provide an educational opportunity for visitors. The "Malpais Nature Trail" at Valley of Fires State Park provides an educational experience for park visitors and students from nearby schools. In addition to existing educational uses, information gained from scientific studies may enhance future educational values of the WSAs.



#### F. Realty Actions

There are no existing rights-of-way, withdrawals, easements or permits on public lands within the boundaries of either WSA; the WSA boundaries are located 50 feet on either side of the U.S. Highway 380 centerline.

The only known potential realty action in the WSAs would be in the immediate vicinity of the U.S. Highway 380 corridor. The New Mexico State Highway Engineer has indicated that the lava flow segment of U.S. 380 needs reconstruction and a right-of-way should be acquired. Long-term potential needs for highway purposes in this area are estimated to affect no more than a 300 foot wide corridor of public lands.

#### G. Military Use of Airspace

The United States Air Force currently uses airspace either directly above or in the immediate vicinity of both WSAs for airborne tactical training maneuvers. This use normally consists of flights at elevations below 10,000 feet at speeds in excess of 250 knots. Some high speed flights occur at 500 to 1500 feet above ground level.

At the time this report was prepared there were parts of three military training routes and one restricted area overlying the WSAs. However, training routes are periodically modified or deleted to introduce route variation and prevent pilots from memorizing a particular course of travel. It is possible that at different times airspace above the WSAs may not be within any training route.

The Air Force has indicated that continued use of airspace above the WSAs is essential to their operational and training missions.



IV. WILDERNESS CRITERIAA. Evaluation of Wilderness Values1. Quality of Mandatory Wilderness Characteristicsa. Naturalness

The imprint of man's work is very limited within the boundary of both WSAs. Two major factors which contribute to the generally natural appearance of these WSAs are: (1) the lack of exploitable resources and presence of rugged terrain within the lava flow has prevented most of man's activities; and (2) areas containing significant manmade intrusions were excluded from the study area boundaries during the inventory process.

Imprints of man that are known to be within the current boundaries for both WSAs are described as follows and depicted on the accompanying map:

(1) Vehicle Routes - There are portions of six low-standard motorized vehicle access routes within the WSAs' boundaries, with most routes paralleling the edge of the lava flow. One vehicle route provides access across less than 1/4 mile of lava to the kipuka in Section 9, T. 7 S., R. 10 E.

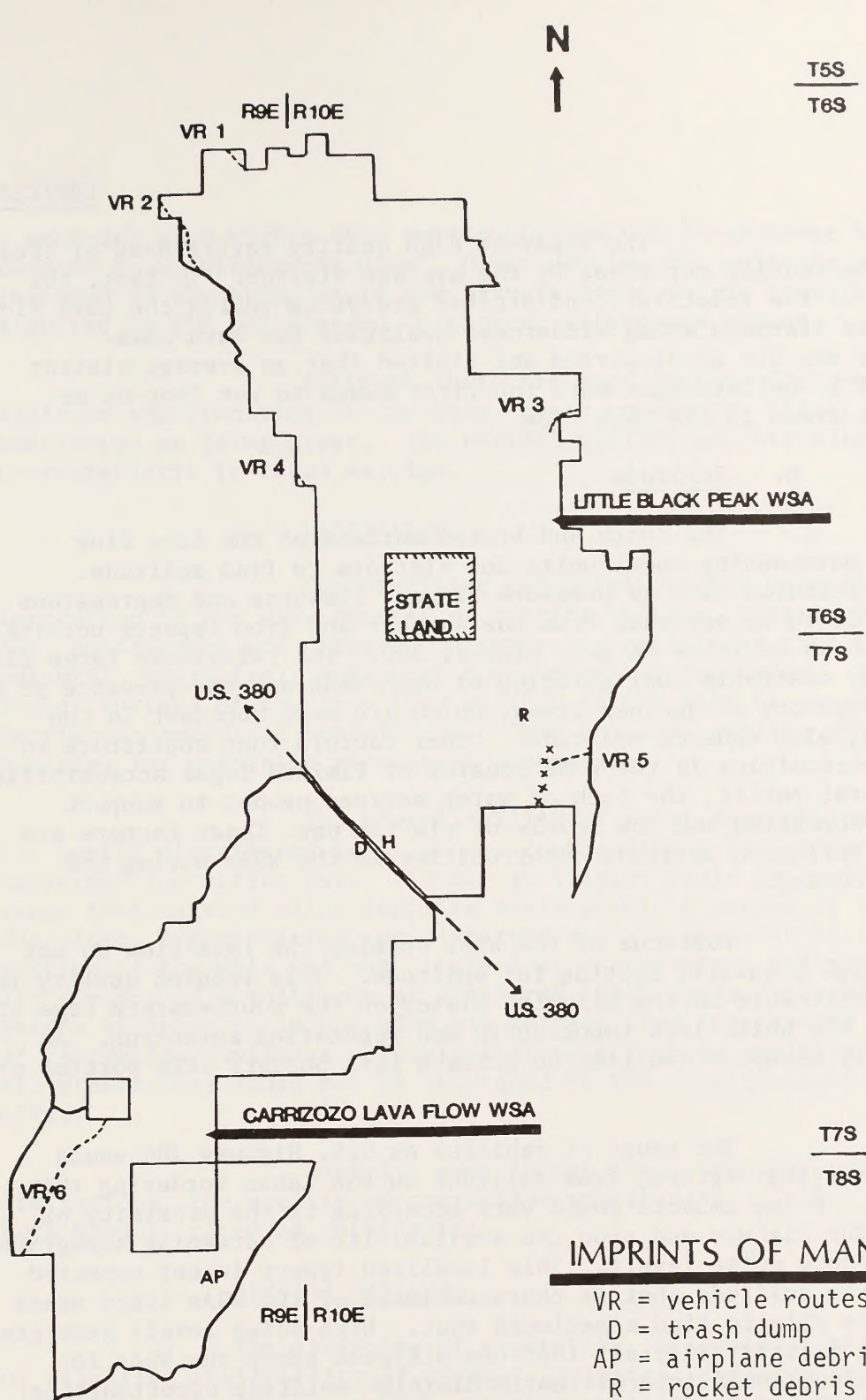
(2) U.S. 380 Travel Influence Zone - There is an unauthorized trash dump, scattered roadside litter and some painted graffiti on lava rocks that border U.S. Highway 380. Some of these minor imprints are within the study areas since the edge of the highway right-of-way is the north or south boundary for both WSAs. One abandoned homestead in the Little Black Peak WSA is within this travel zone.

(3) Mineral Exploration - There are 5 prospect trenches, some of which are 40' long by 20' wide by 8' deep, on the kipuka in Section 9, T. 7 S., R. 10 E. These trenches are noticeable within the kipuka but natural vegetation has reduced their offsite noticeability to some extent. Recent exploratory drill holes on the kipuka are substantially unnoticeable.

(4) Miscellaneous Imprints - In the southern WSA there are the tail section and debris from a wrecked airplane, and the debris from a wrecked rocket or missile is in the northern WSA.

The individual and cumulative effect of human imprints within the WSAs has not significantly impaired their natural character. The minor imprints that are present near the lava flow edge are easily removed from view by traveling a short distance inside the lava which has excellent topographic screening qualities. Due to the location of these imprints near the WSAs' external boundaries, it would be possible to exclude imprinted areas from a wilderness recommendation. The screening effects of topography also minimize the influence of outside sights and sounds of highway traffic upon the naturalness characteristic.





### IMPRINTS OF MAN IN WSA s :

- VR = vehicle routes (1 through 6)
- D = trash dump
- AP = airplane debris
- R = rocket debris
- H = abandoned homestead
- X = mineral prospect pits

SCALE; one-half inch = one mile



The apparent high quality naturalness of these WSAs would be readily perceived by the average visitor. In fact, the naturalness of the relatively undisturbed ecosystem inside the lava flow is one of the distinguishing wilderness qualities for both WSAs. Evidences of man are so dispersed and limited that an average visitor would be led to believe they were the first human to set foot on or observe most areas in the lava flow.

b. Solitude

The rough and broken surface of the lava flow provides an outstanding opportunity for visitors to find solitude. Topographic features such as pressure ridges, fissures and depressions allow visitors to be screened from one another and from impacts outside the area such as vehicles on U.S. Highway 380. The relatively large size and generally desirable configuration of both WSAs and the presence of a scattered overstory of juniper trees, which are more abundant in the northern WSA, also enhance solitude. Other factors that contribute to solitude opportunities in the WSAs consist of limited legal accessibility for the general public, the lack of water sources needed to support unconfined recreation and low levels of visitor use. These factors are expected to influence solitude opportunities in the WSAs during the foreseeable future.

Portions of the WSAs outside the lava flow do not provide as high a quality setting for solitude. This reduced quality is especially noticeable in the alluvial plains on the southwestern edge of the southern WSA which lack topographic and vegetation screening. An intermittently occupied dwelling on private land borders this portion of the WSA.

The sound of vehicles on U.S. Highway 380 would detract, in varying degrees, from solitude on WSA lands bordering this travel route. Noise impacts would vary according to the proximity of visitors to the highway and upon the availability of screening topography that would reduce noise levels. This localized impact is not expected to diminish the solitude that is characteristic of the WSAs since users would still be able to find a secluded spot. High noise levels generated by low flying military aircraft that use airspace above the WSAs for training missions would intermittently diminish solitude opportunities. Visitors would not be able to avoid this short duration and infrequent noise impact. However, this activity is not considered to be a barrier to wilderness designation since there are designated wilderness areas that are subject to similar uses.

The undesirable configuration of a narrow peninsula of WSA land in Section 15, T. 7 S., R. 10 E. does not contribute to an outstanding opportunity for solitude. This portion of the WSA varies from about 100 feet to 1600 feet wide, and is bordered by state and private land on three sides. Visitors would have difficulty in finding



a secluded spot within this portion of the WSA if adjacent lands are devoted to nonwilderness uses. Opportunities for solitude could be improved if bordering state and private lands in the lava flow were acquired by BLM and managed to protect wilderness values.

Although there are some factors that detract from solitude opportunities in the WSAs, their cumulative impact is not considered as being great. The overall quality of this wilderness characteristic is rated as high.

c. Recreation

Opportunities for primitive and unconfined types of recreation in the WSAs consist of hunting, hiking, nature study, spelunking, photography and dispersed sightseeing activities that focus on cultural, geological, botanical and zoological resources. The intricately broken surface of the lava flow portion of the WSAs is an effective barrier to motorized vehicle use. This physical quality enhances opportunities for primitive recreation experiences.

The unavailability of water sources inside the WSAs and poorly distributed legal access routes limits the potential for dispersed recreation uses. Visitor activities would be confined to the range that carried water supplies would permit a person to travel. Therefore, opportunities for dispersed use are greatest in the central portion of the WSAs and most limited at the northern and southern ends. The absence of a multitude of landforms, well defined travel routes and points of interest in the WSAs may detract from some people's perception of recreation qualities. People that expect those qualities in a wilderness area would not be intrigued by the opportunities these WSAs offer.

Overall, even though there are some resource limitations, the quality of recreation opportunities in both WSAs is rated as outstanding.

2. Special Features

The diversity of vegetation, presence of melanistic forms of wildlife, availability of unusual geological features such as caves and volcanic landforms, and the scenic qualities of the recent lava flow constitute the special features of this WSA.

3. Multiple Resource Benefits

Resource values and uses in the WSAs that would be perpetuated through wilderness designation and protective management include wildlife habitat and associated species, cultural values, watershed, nonmotorized recreational activities and scenic values.



Congressional designation as wilderness would carry the weight of law and would provide a greater degree of long term protection for natural values than would the administrative designations available to the Bureau.

#### 4. Diversity

##### a. Ecosystems Present

Use of the Bailey-Kuchler classification system has been selected by BLM to ensure nationwide consistency in evaluating this diversity criteria. According to the Bailey-Kuchler system, both WSAs are located within the Colorado Plateau Province and have Juniper-pinon woodland potential natural vegetation.

##### b. Distance To Population Centers

The WSAs are within 5 hours driving time from the following Standard Metropolitan Statistical Areas - Albuquerque, New Mexico and both El Paso and Lubbock in Texas.

#### B. Manageability

In order for the WSAs to be recommended as suitable for wilderness designation they must be capable of being managed over the long run to preserve wilderness character. Manageability of an area is determined based upon an evaluation of provisions contained in BLM's Wilderness Management Policy (WMP). The following manageability factors were determined to potentially affect the ability of the BLM to preserve wilderness character: topography, State inholdings, legal access, and a potential realty action.

A small portion of the WSAs that lacks a lava rock surface has gentler topography and is susceptible to activities such as motorized vehicle use which could conflict with wilderness management. Areas with gentle terrain are found in grassy coves and surrounding plains on the northern boundary of Little Black Peak WSA, and the alluvial plains/limestone hills in the southwestern part of Carrizozo Lava Flow WSA. There are no natural barriers to prevent conflicting uses on the alluvial plains near Crockett's Ranch, and non-conforming activities could occur in drainages within the limestone hills.

Although the lack of legal access to the northern and southern ends of the WSAs has not interfered with BLM management efforts, future problems could arise if access for management purposes is denied in those areas. Potential access problems could be resolved by acquiring easements on existing roads, or by acquiring State and private lands to provide rights of access.



The State inholding in Little Black Peak WSA (Section 32, T. 6 S., R. 10 E.) is potentially subject to exploration for oil and gas resources because this land has been leased. It is probable that use of State lands would occur prior to the lease expiration date in June 1991. Exploration activities are more likely to occur on State lands since there are no restrictions to protect wilderness values, as is the case on surrounding public lands. Although it is difficult to predict what exploration method would take place, it is assumed that in the most extreme case, road access would be needed across WSA lands. Two State sections are located on the east boundary of the Carrizozo Lava Flow WSA. Section 36, T. 7 S., R. 9 E., has been leased for oil and gas development while Section 2, T. 8 S., R. 9 E. is open for leasing. At the present time road access could be provided to Section 36 across public lands that are outside of the WSA in Section 31, T. 7 S., R. 10 E. However, if road access is ever needed to Section 2, the shortest route would be across WSA lands in Section 1, T. 8 S., R. 9 E. Depending upon the construction methods, routing and type of materials used for potential access roads, these non-conforming uses would have localized effects but would not significantly interfere with manageability of the WSAs and boundary adjustments are unnecessary.

The potential right-of-way expansion and reconstruction work on U.S. Highway 380, in addition to the concentrated imprints of man along this travel route, impairs wilderness manageability in contiguous portions of both WSAs. Present and potential activities are reasonably certain to destroy wilderness character in the affected area, but a boundary adjustment could prevent manageability problems.

BLM is reasonably certain, based upon present knowledge of the resource values and non-federal rights which exist, that both WSAs can be managed long-term as wilderness.

The WSAs are manageable as wilderness; however, manageability would be enhanced through acquisition of one State inholding in Little Black Peak WSA and other unimpaired state and private lands within the lava flow that border both WSAs. This potential enhancement measure, conducted through a voluntary exchange or purchase program, would be conducted with the goal of acquiring non-federal lands that would form logical additions to a designated wilderness. If the WSAs are designated as wilderness, a land consolidation program would reduce problems associated with providing adequate access to inholdings and would allow for consistent management of the lava flow landform. Irregular ownership patterns along the edge of the lava would be improved and a wilderness boundary that coincides with the lava flow edge could result. Other non-federal lands could be acquired, although for reasons which aren't essential for wilderness management purposes.



The maximum amount of land acquisitions needed to enhance wilderness manageability and provide for legal access is about 9,800 acres. The location of potential land acquisitions are described as follows:

<u>Land Description (New Mexico Principal Meridian)</u>		<u>Acres</u>	<u>Ownership Status</u>
T. 6 S., R. 9 E.,	Sec. 1: Lots 1 through 12 and NW $\frac{1}{4}$ SE $\frac{1}{4}$	436.60	Private
	Sec. 2: Lots 1, 2, 7 through 10 and SE $\frac{1}{4}$	371.27	State
	Sec. 11: W $\frac{1}{2}$ SE $\frac{1}{4}$ and SW $\frac{1}{4}$ NE $\frac{1}{4}$	120.00	Private
	Sec. 24: S $\frac{1}{2}$ SE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ and NW $\frac{1}{4}$ SE $\frac{1}{4}$	240.00	Private
	Sec. 25: E $\frac{1}{2}$	320.00	Private
T. 6 S., R. 10 E.,	Sec. 5: Lot 12, S $\frac{1}{2}$ S $\frac{1}{2}$ and NW $\frac{1}{4}$ SW $\frac{1}{4}$	240.00	Private
	Sec. 6: Lots 1 through 9 and Lot 12	411.89	Private
	Sec. 9: W $\frac{1}{2}$ NW $\frac{1}{4}$	80.00	Private
	Sec. 16: All	640.00	State
	Sec. 22: E $\frac{1}{2}$ W $\frac{1}{2}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$ and NW $\frac{1}{4}$ SW $\frac{1}{4}$	280.00	Private
	Sec. 27: NW $\frac{1}{4}$ , W $\frac{1}{2}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$ and SE $\frac{1}{4}$ SE $\frac{1}{4}$	440.00	Private
	Sec. 30: Lots 2 through 4	103.22	Private
	Sec. 31: Lots 1 through 4	139.32	Private
	Sec. 32: All	640.00	State
	Sec. 34: NW $\frac{1}{4}$ NE $\frac{1}{4}$	40.00	Private
T. 7 S., R. 9 E.,	Sec. 35: W $\frac{1}{2}$ W $\frac{1}{2}$	160.00	Private
	Sec. 1: E $\frac{1}{2}$ E $\frac{1}{2}$	160.00	Private
	Sec. 11: NE $\frac{1}{4}$ SE $\frac{1}{4}$	40.00	Private
	Sec. 12: NE $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ and SW $\frac{1}{4}$ NW $\frac{1}{4}$	280.00	Private
	Sec. 23: NW $\frac{1}{4}$ NE $\frac{1}{4}$ and NE $\frac{1}{4}$ NW $\frac{1}{4}$	80.00	Private
	Sec. 34: NE $\frac{1}{4}$	160.00	Private
T. 7 S., R. 10 E.,	Sec. 36: All	639.68	Private
	Sec. 3: Lots 1 through 5, S $\frac{1}{2}$ SE $\frac{1}{4}$ and NE $\frac{1}{4}$ SE $\frac{1}{4}$	248.69	Private
	Sec. 10: Lot 4	26.70	Private
	Sec. 15: Lots 1 through 5	186.72	Private
	Sec. 16: All	656.16	State
	Sec. 21: Lots 1, 2, 5 and Lot 6	87.59	State
	Sec. 21: E $\frac{1}{2}$ SE $\frac{1}{4}$ and SW $\frac{1}{4}$ SE $\frac{1}{4}$	120.00	Private
	Sec. 22: NW $\frac{1}{4}$ NW $\frac{1}{4}$	40.00	State
	Sec. 29: Lots 1 through 20 and NW $\frac{1}{4}$ NE $\frac{1}{4}$	558.11	Private
	Sec. 30: Lots 1 through 3	60.97	Private
	Sec. 31: Lot 1, 3, 4 and N $\frac{1}{2}$ NE $\frac{1}{4}$	132.63	Private

(Land Description concluded on following page).



			<u>LBP/CLF</u>	
T. 8 S., R. 9 E.,	Sec. 2:	All	640.00	State
	Sec. 9:	E $\frac{1}{2}$ NE $\frac{1}{4}$	80.00	Private
	Sec. 12:	Lots 1 through 4, NE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ NE $\frac{1}{4}$ and SE $\frac{1}{4}$ SW $\frac{1}{4}$	245.18	Private
	Sec. 13:	E $\frac{1}{2}$ NW $\frac{1}{4}$	80.00	Private
	Sec. 14:	Lots 1 through 2	31.58	Private
	Sec. 16:	Lots 2 through 8, NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , W $\frac{1}{2}$ NE $\frac{1}{4}$ and NW $\frac{1}{4}$ SE $\frac{1}{4}$	604.28	State
	Sec. 16:	Lot 1	10.13	Private
	<hr/>			
	Private Subtotal	6151.42	Acres	
	State Subtotal	3679.30	Acres	
<hr/>				
	Grand Total	9830.72	Acres	



## V. CONSULTATION AND COORDINATION

### A. Public Involvement Overview

This report was prepared after considering information and comments provided by the public. Public views concerning BLM's wilderness recommendation for these WSAs will continue to be requested and considered during later stages of the wilderness study process.

Public comments regarding the identification and selection of these areas for wilderness study were requested in 1979 and 1980 during the inventory phase of BLM's wilderness review program. However, unsolicited public interest in this area was expressed prior to the start of inventory work. A comment in a nationally distributed 1978 magazine article recommended the Carrizozo Malpais as a candidate for wilderness designation since it was notable as one of the most recent lava flows in the western United States.

During the public comment period on wilderness study area proposals, individual comments and petitions concerning both WSAs were received by BLM. Most of the individual comments and all petitions favored wilderness study for these areas. Most people indicated that wilderness characteristics were present, although some people did not offer supporting reasons for their recommendation. Comments opposing wilderness study cited as supporting reasons: the presence of range, road and mining impacts; noise impacts from traffic on nearby highways and aircraft overhead; and potential problems with access to state land.

Public comments received since completion of the inventory phase described existing and potential resource uses. One comment opposed wilderness designation due to mineral resource conflicts. Local, state and federal agencies have been requested to identify problems that wilderness designation would have with their plans, policies or regulations. The resource use issues identified by the public at that time were surrounded state trust land, highway use and military training use of airspace.

During the public comment period on the Draft EA a total of 40 public comments were received on the Carrizozo Lava Flow and Little Black Peak WSAs. 27 of the 40 commentators supported wilderness designation of the WSAs and most respondents agreed with the Amended Boundary preferred alternative. The remainder of supportive comments preferred the All Wilderness alternative, offered no opinion on wilderness boundaries, or proposed acreage increases or decreases. 5 commentators opposed wilderness designation, primarily on the basis of potential mineral resource conflicts. 8 commentators did not offer opinions for or against wilderness designation or made diverse technical comments on specific parts of the BLM assessment (see Roswell District, Wilderness Final Environmental Assessment, August 1984 for additional detail).



Two commentators questioned the mineral resource information which BLM used to evaluate potential resource uses and impacts.

One commentator requested deletion of a mineralized area with moderate favorability for silver/copper/gold in the southern part of Carrizozo Lava Flow WSA. No data was provided to support that rating and the location was not described. The GEM assessment assigned a low favorability for copper/silver/gold mineralization in both WSAs. Due to the low favorability ratings it was determined by BLM that boundary modifications were not needed to resolve potential resource conflicts. The same commentator also requested a boundary adjustment to exclude 22 mining claims and the mineral exploration area in Little Black Peak WSA. Previous requests to exclude the mining claim area were considered earlier in the wilderness study process, but boundary modifications to eliminate potential conflicts with a resource having low favorability were not determined to be warranted. Also, the impacts of previous mineral exploration in this area were determined, during wilderness inventory, to be substantially unnoticeable and did not significantly affect naturalness of the WSA.

The other mineral commentator disagreed with mineral favorability ratings for oil and gas resources in Little Black Peak WSA. The GEM assessment assigned a low favorability rating based on indirect evidence. It was noted that more exploration may be necessary to determine if there is oil and gas present. The mineral commentator had previously rated this WSA as having high intermediate favorability for oil and gas based upon the presence of a "number" of geologic characteristics. The GEM assessment considered the geologic environment, inferred geologic processes, and reported mineral occurrences or production records prior to arriving at a favorability rating. Due to the absence of extensive subsurface exploration and lack of seismic information the true potential for oil and gas resources cannot be accurately predicted at this time.

Since mineral favorability ratings are determined using available information, which is subject to varying interpretations, BLM will consider additional mineral resource information prior to making a final wilderness suitability recommendation for these WSAs. A joint mineral survey will be conducted on these WSAs in the near future by the U.S. Geological Survey and Bureau of Mines. The results of this survey will be considered by the BLM Director in arriving at recommendations on wilderness suitability. Any additional mineral resource information that the public or minerals industry may be able to provide concerning these WSAs will be accepted and considered by BLM during later phases of the study process.



B. SUMMARY OF SCOPING

Table V-1 lists alternatives and issues considered for analysis in this WAR. These alternatives and issues were raised by BLM and the public during wilderness inventory and preparation of the District Environmental Assessments. Issues related to minerals, water, soils, vegetation, wildlife, visual resources, cultural resources, recreation, education/research, military use of airspace, and external sights and sounds were considered in the District Final EA. However, because little or no environmental impacts were identified in previous stages of wilderness study, issues relating to these resources and uses are not analyzed in this WAR unless otherwise indicated in the following table.

TABLE V-1  
LITTLE BLACK PEAK/CARRIZOZO LAVA FLOW SUMMARY OF SCOPING

Alternatives Raised and Set Aside	Reasons for Not Including this Alternative
Expanding the WSAs.	This was not considered further because it would require consideration of lands not nominated for wilderness study and lands not protected by interim management; however, there were cases considered where expanding the boundary would be desirable for management purposes.
An alternative that includes a different amended boundary.	Upon evaluating other potential boundary adjustments, the amended boundary developed by BLM was considered to adequately minimize resource conflicts, improve manageability and protect wilderness values.
Issues Raised and Set Aside	Reasons for Not Conducting a Detailed Analysis
Mineral Resources	No significant impacts have been identified for these issues. See <u>Roswell District, Wilderness Final Environmental Assessment/Wilderness Analysis Report, August 1984.</u> For this reason, no impact analysis is presented in Chapter VI on these subjects.
Water Resources	
Soils	
Vegetation	
Wildlife	
Visual Resources	
Cultural Resources	
Recreation	
Education/Research	
Military Use of Airspace	
External Sights and Sounds	



TABLE V-1 (continued)

Livestock Grazing	No significant impact was identified to livestock grazing; however, this issue is discussed in Chapter VI because of statewide interest.
Alternatives Selected for Detailed Analysis	Reasons
All Wilderness	An evaluation of All Wilderness is required.
No Wilderness	The no action alternative is required.
Amended Boundary	This is the proposed action since this alternative would minimize resource conflicts, improve manageability and protect wilderness values.
Issues Selected for Detailed Analysis	Reasons
Impacts to highway expansion (Realty Actions)	The All Wilderness alternative would preclude expansion of U.S. Highway 380 and could result in potential safety problems if traffic volume increases as projected on this route.
Impacts to wilderness values	The major considerations for the decision-maker to recommend areas as suitable or unsuitable for wilderness designation is the quality and manageability of wilderness values. Both the All Wilderness and Amended Boundary alternatives would provide for significant protection of wilderness values on 25,312 acres and 24,249 acres, respectively. The No Wilderness alternative would not provide for protection of wilderness values, and values would be lost or impaired in areas where surface disturbance takes place.



VI. ALTERNATIVES AND IMPACTSA. ALL WILDERNESS ALTERNATIVE

Under this alternative, the entire 25,312 acres of public lands in both WSAs would be recommended as suitable for wilderness designation (see map on page 36/37-6 for a description of the WSAs' boundaries). If designated wilderness, the existing uses and activities in the area and potential uses identified in Chapter III would be managed under the constraints of the Wilderness Management Policy (BLM 1981).

Under the All Wilderness Alternative, the impacts to expansion of U.S. Highway 380 would be significant. The impacts to wilderness values would also be significant because of the added protection of Congressional designation. The impacts to livestock grazing, though non-significant, are discussed because of statewide public interest and perceptions.

1. Livestock Grazing

Potential use by goats of presently ungrazed areas would be managed to prevent conflicts with wilderness values, such as plant communities and wildlife habitat. Range improvements, if needed, would be constructed only for improved management of livestock or for resource protection, and not for the purpose of increasing herd sizes. Generally, motorized access on 4 miles of existing trails would not be permitted. However, if there were no practical alternatives, permits for vehicle use could be issued to livestock permittees. Impacts to livestock grazing would not be significant.

2. Impacts to Highway Expansion

Potential expansion in the width of U.S. Highway 380 would be precluded by this alternative. The highway right-of-way would remain at 100 feet wide and future activities would be confined to that corridor. Denial of highway expansion to improve safety and meet demands for increased traffic could be highly controversial and would result in a significant impact. Safety impacts could occur if adjoining parts of the highway are improved and traffic volume increases in the future.

3. Wilderness Values

Wilderness designation would provide for long-term protection of wilderness values on all lands inside the WSAs, as mandated by Congress. Existing imprints of man would be rehabilitated to substantially unnoticeable conditions and vehicle routes would be closed to motorized use.



Manageability problems, identified in Chapter IV.B., would not be remedied and more administrative work would be needed to ensure protection of the designated wilderness.

#### B. AMENDED BOUNDARY ALTERNATIVE

Under this alternative, boundary adjustments would exclude approximately 1,063 acres of public land from a wilderness recommendation. Boundary adjustments would remove lands with lower quality wilderness characteristics, eliminate a significant conflict with highway expansion, and enhance manageability of the remaining area. Boundary adjustments consist of removing relatively flat and open terrain bordering the lava flow, a narrow finger of lava bordered by non-public lands, and WSA lands paralleling U.S. Highway 380. The amended boundary alternative is depicted on Map I-1 on page 36/37-6 of this report.

This alternative would not cause a significant impact to potential expansion of U.S. Highway 380 since this use could be allowed; for this reason, this resource use is not mentioned in the following impact discussions. Impacts to wilderness values would be the only significant impact under this alternative.

##### 1. Livestock Grazing

Impacts are not considered to be significant and would be similar to those described for the All Wilderness alternative. A slight change in impacts would occur since most existing vehicle trails would remain open to motorized access, except for a trail 0.2 miles long that extends west from the lava flow edge to the large kipuka in Little Black Peak WSA. Revegetation of 3.8 miles of trails would not occur under this alternative. If no practical alternatives exist, permits for vehicle use on the 0.2 mile trail could be issued to the livestock permittee.

##### 2. Wilderness Values

Under this alternative, wilderness values in the most manageable part of the WSA would be protected through long-term Congressional designation, which is a significant impact. The rugged topography inside the designated wilderness would serve as a barrier to nonconforming uses. Therefore, external impacts would probably not have a significant effect upon nearby wilderness values. Management of the 1,063 acres of WSA lands excluded under this alternative would be subject to uses other than wilderness, however, minimization of impacts to the contiguous wilderness area would be a primary management concern. Wilderness values, such as naturalness, on lands which are recommended as nonsuitable would be lost through activities such as highway expansion, off-road vehicle use, mineral exploration and lava rock extraction.



### C. NO ACTION/NO WILDERNESS ALTERNATIVE

This alternative describes the impacts to wilderness values and other resources that would occur if the WSAs are not designated as wilderness and existing resource uses are continued. The only constraints that would apply to resource utilization would be physical and economic limitations. There would be no special form of management to conserve or protect resource values except for actions mandated by law, policy, rule or regulation. Future surface disturbing activities, such as material sales and exploration on mineral leases, would probably be confined to the periphery of the lava flow as they have in the past. The rugged terrain in this landform would continue to present a natural barrier to most uses. The lack of Congressional protection and potential for loss of wilderness values would be a significant impact under this alternative.

This alternative would not affect proposed expansion of U.S. Highway 380 and livestock grazing. For this reason, there are no impact discussions in the following analysis.

#### 1. Impacts to Wilderness Values

Under the no action alternative there would be no long-term special protection accorded to wilderness values.

Material sales and mineral exploration along the periphery of the lava flow would cause localized degradation of wilderness values. The additional cost of construction for exploration in this rugged terrain would minimize the extent of future impacts. During the foreseeable future, wilderness values in the central part of the lava flow are expected to remain unaffected by man's activities because of the protective topography. Wilderness values in less rugged portions on the borders of the WSAs are more susceptible to change and could potentially be lost due to the impact of future land alterations.

Nonconforming uses (access to state lands and development of mining claims) would be regulated only to prevent unnecessary and undue degradation of public lands. Impacts to wilderness values would not be considered when allowing these uses and there would be a greater effect upon the wilderness resource under this alternative. Also, patents that include both surface and mineral rights could be issued on valid mining claims; wilderness resources would be lost on mineral development areas and solitude could be degraded on adjacent areas. Impacts would be significant because of this alternative.



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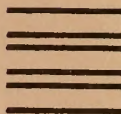
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